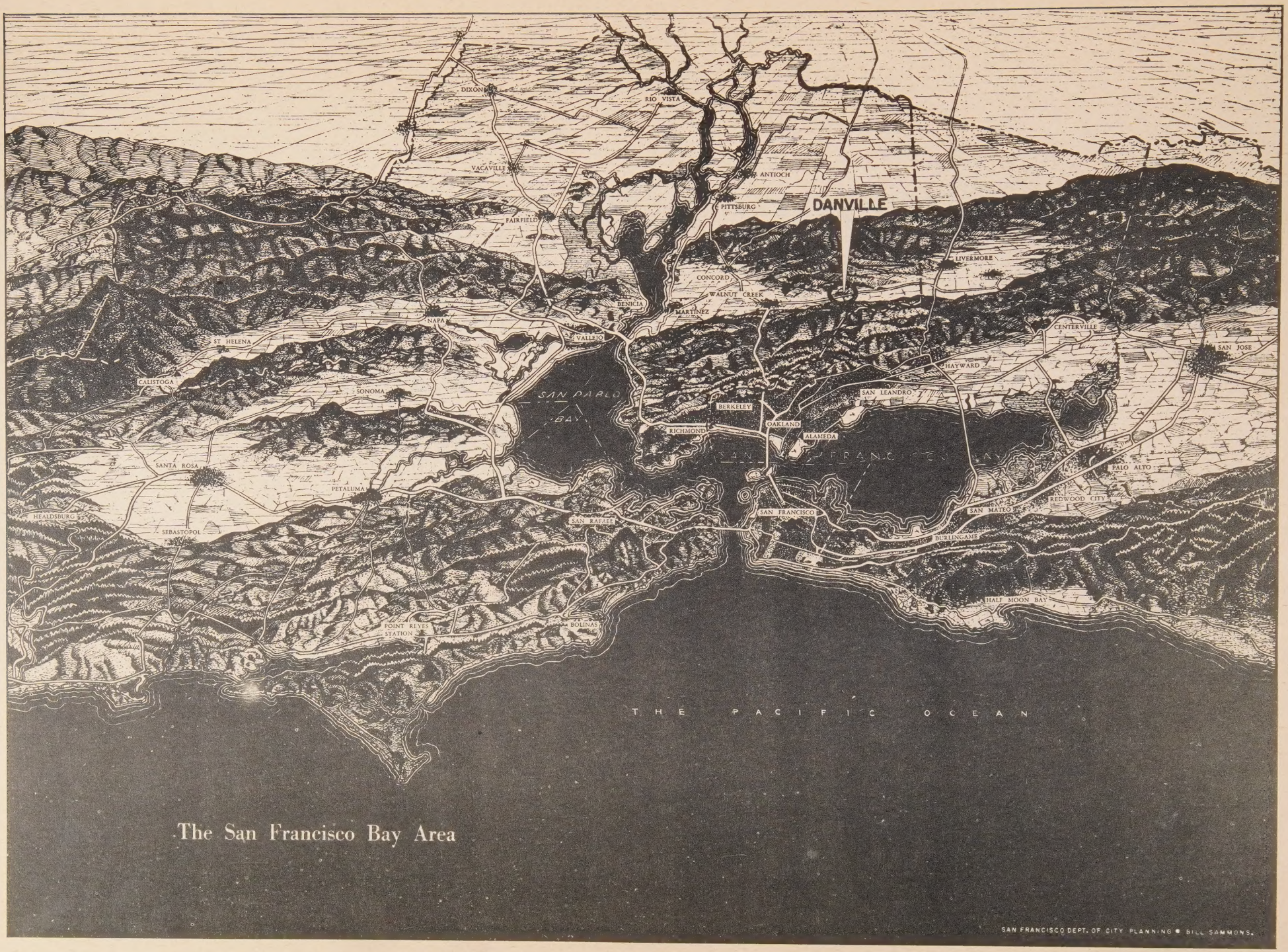
A NEW CITY AT DANVILLE

A PROPOSAL FOR GUIDING METROPOLITAN GROWTH

Despite its great wealth, the United States can no longer afford many of the forms of city growth that have accompanied the rise of its urban population. Overcrowded housing areas, traffic-jammed downtown business districts, stifled industrial areas, inadequate street systems, time-consuming and costly transportation to and from mushrooming suburbs--all these constitute a mounting threat to the successful operation of the nation's economy.

"Statement of Policy on Urban Development and Expansion," The American Institute of Planners



The San Francisco Bay Area

Preface

The ideas of metropolitan organization and planned limited development of outlying communities described in the report that follows are ideas that, sooner or later, will have to be considered and acted upon by official city and county planning agencies as their programs become more effective and their concepts become more clear. This is especially true in California where urban growth is continuing at such a rapid pace. It is to a study of these ideas that this report is devoted in the hope that it may serve a useful purpose for professional practicing planners by providing a careful record of a technical planning experience involving a metropolitan area and a new community of limited size - an experience that will be shared by an ever greater number of planners in the years to come.

A serious effort was made by all concerned, students and instructor alike, to make the most of the special interests and abilities of the twelve members of the group. Whatever deficiencies the report itself may have, the collaborative effort, which was primarily the responsibility of the students, was an outstanding success. It has been a privilege for me to work so closely with the students of the group and to share their growing awareness of the challenging opportunities that are facing the planning profession.

I wish to add my expression of appreciation to the acknowledgements made elsewhere for the cooperation of the many individuals who have helped in the conduct of the study and without which the report would not have been possible.

T. J. Kent, Jr.
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T. J. Kent, Jr.
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January 5, 1951

T. J. Kent, Jr.
Associate Professor of City Planning
University of California
Berkeley, California

We herewith submit to you the report entitled "A New City at Danville" which constitutes our solution to the problem assigned. The members of the class, City Planning 213, received this assignment from you on October 30, 1950. In accordance with your instructions we have investigated the problems which are being created by metropolitan growth and expansion in the San Francisco Bay Area and have prepared a general plan for a new city at Danville as an example of the way in which metropolitan expansion can be guided to create a better urban environment.

This problem has been completed in ten weeks by a work force of twelve students, each of whom has had administrative responsibility and authority for some portion of the completed project in addition to assigned duties concerned with research, writing, designing, layout work, and drafting.

During our course of study in the city planning curriculum we have applied ourselves to problems in a very broad field, involving the physical, social, and economic aspects of urban planning. Studying these interlocking relationships has been a stimulating experience and a source of great interest to us all. It has seemed especially fitting that such a diversified range of problems should be concluded by one of such imaginative implications and yet dealing with ideas which appear to be rapidly maturing for serious practical consideration.

We take this opportunity to thank you, as class coordinator, for all the guidance, advice, and constructive criticism which have contributed immeasurably in the preparation of this report.

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Edward N. Bryant
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William E. Finley
James Keilty
Jerome W. Lubin
Norman Murdoch
Y. B. Shinoda
Arthur L. Spencer
Thornton K. Ware
Robert L. Williams
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Acknowledgements

It is not possible to specifically acknowledge all those who have contributed to the completion of this report. Due to the generous cooperation of those with whom the group had contact it was possible to assemble, properly evaluate, and use the numerous statistics, maps, books, and other information obtained during the course of the problem. The citizens and officials of both Danville and Contra Costa County are especially to be thanked, as are all those members of the planning profession who devoted much of their time to the project.

The group is particularly indebted to the following for advice and assistance:

Agricultural Extension Service, University of California
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Danville Chamber of Commerce
San Francisco Department of City Planning
San Ramon Valley Union High School District
Institute of Transportation and Traffic Engineering, University of California
Richmond Public Housing Authority
Richmond Planning Commission
Richmond Redevelopment Agency
Social Science Reference Service, University of California
Valley Pioneer

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A NEW CITY AT DANVILLE: A Proposal for Guiding Metropolitan Growth

A Summary

As a possible solution to some of the important problems characteristic of urban growth in metropolitan areas this report proposes the application of the "New City" concept. The significant points brought out in the report are summarized as follows:

Concerning American society and the urban environment:

In pursuing the basic aims of freedom and plenty, American society has permitted one of the physical embodiments of these goals - its urban centers - to develop in a manner incompatible with the realization of these aims.

The imperfections of the urban structure must be rectified. Contemporary city planning principles and processes offer the means for guiding the development of an entire urban environment worthy of the aims of the American people.

Concerning the problems of metropolitan growth:

The San Francisco Bay metropolitan area is an example of the conflict which hinders the realization of the basic aims. Inconvenience, overcrowding, and congestion have had an adverse effect upon the general welfare, and have resulted in a lowering of efficiency in the conduct of human affairs. These problems are area-wide in scope and their solution depends upon a growing regional outlook.

Regional planning is a necessary requisite to the proper development of the San Francisco Bay metropolitan area. The goals of regional planning as proposed in this report are: planned expansion, decentralization, and regional integration.

The concept of the New City, as based on British experience, offers a new approach to the achieving of planned expansion and decentralization within a metropolitan regional framework.

Concerning the possibility of a new city at Danville:

The major thesis of the report is that of the New City, the principal implications of which include

1) limiting the size of the community as regards ultimate population and area; 2) providing for a varied and relatively independent economic base for the new city; 3) reserving a permanent greenbelt surrounding the living and working areas of the city; 4) providing opportunities for a varied and vigorous community life for all inhabitants of the new city.

The site selected for study is that of the town of Danville in Contra Costa county. The plan for a new city on this site is general in nature, outlining a feasible development of the report's major thesis - the New City. Research into the desirable features which are to be incorporated into the proposed community has determined 1) the size of the new city; 2) the size and type of economic base to be provided; 3) its general location in the Bay Area; 4) its location as related to major rail and automobile routes; and 5) specific provisions for neighborhood and community-wide facilities.

Concerning the effects of planned metropolitan expansion upon the pattern of American living:

The type of planned expansion for the metropolitan region, as recommended in the report, would aid in preventing the undesirable features characteristic of present urban growth, and would serve to provide these benefits: 1) a richer and more varied community life for all the residents of the metropolitan area; 2) integration of the new cities within the regional transportation and communications system; 3) reduced time going to and returning from work; 4) a greater amount of living space on the ground per family; 5) more convenient and accessible schools, parks, working and shopping areas; 6) greater accessibility to the countryside for recreation; 7) protected and preserved open space, including large parks and recreational areas; and 8) greater opportunity for the redevelopment of the congested and blighted portions of the inner urban areas in the metropolitan region.

The new city is, in effect, a logical extension of the general pattern of American living. The individual citizen, presented with new and more varied opportunities, is enabled to more fully develop his potentialities within the framework of a democratic society.

AIMS OF AMERICAN SOCIETY AND URBAN DEVELOPMENT

Introduction

A completely satisfactory description and analysis of the aims of American society cannot be forthcoming from such a short and schematic inquiry as is this report. To measure up to acceptable standards of social research, such description and analysis demands prodigious research and the utilization of techniques of analysis from all the social sciences. This is not to say that an incomplete analysis is without value as a working hypothesis, but such a delimited investigation must concentrate on the essential elements--at the sacrifice of derivations and details--to justify its usefulness.

In order to abstract the essential elements from such a rammified subject as the aims of a society, one is forced at the outset to resort to rigorous simplification. The first step toward such simplification is one of definition. What are the "aims" of a society and, for that matter, what is a "society"? Among the various social science disciplines the most basic and succinct definitions for these catagories appears to be those offered by anthropology.

A general contention among anthropologists is that all societies owe their existence to a combination of three distinct elements. Seemingly almost truisms--at first glance--these elements are cites as: (1) an aggregate of individuals, (2) an organized system of patterns by which the interrelations and activities of these individuals are controlled, and (3) an *esprit de corps*.

The evolution of the aims of American society has been characterized in the past by periods of relative stability as well as periods of violent and rapid readjustment. Contemporary American society is by no means in a state of somnolent complacency. It is a matter of interpretation as to whether the existing state of flux would be called unstable equilibrium or stable disequilibrium. Possibly, the implications of the latter are more serious. But, this dynamic potential, so sharply evident yet so superficially obscured, can only be abstracted, in turn, into its essential elements by examining the society as an historical continuum. This historical examination in terms of the aforementioned basic elements of society, for example, would reveal that: (1) The aggregate of individuals has varied considerably in a relatively short period of time, and that today, this aggregation--basically stabilized as to composition--has a serious lack of homogeniety. (2) The organized system of patterns controlling the activities of individuals has been subjected to drastic alteration at times and appears to be subject to constant--but not necessarily consistent--change. (3) The _esprit de corps_ has been seldom subject to extreme stress in the past, but today is on the threshold of a decisive test.

Undoubtedly, the two most fundamental institutions in the life of an American citizen are those which furnish the social sanctions an operational theory--the plan--for his relations with other members of the society, and for the means by which he earns his bread. Indeed, these two operations are fundamentally the point of departure for examining any society, but the shortest route for the analysis of these operations in many societies might well be an examination of the family, for example where the societies are composed of extended families or clans, or in some cases, through an examination of the religion of the society. Whatever might be the deviations, variations, or inconsistencies, these two basic activities are ultimately traceable in American society to the two institutions of (1) political democracy, and (2) private property.

Justifiably, the selection of the two institutions of political democracy and private property might be questioned as _the_ institutions that are crucial to an analysis of the objectives of _American_ society. It might be argued that political democracy (i.e., the models of the 17th and 18th centuries subsequently developed in western culture) is still widely extant in other parts of the world, and also that no known society has

existed without some form of private property. Granting the validity of the above statement, there are still defensible and highly practical reasons for the selection. In the first place the theoretical development of these ideas into their classic philosophical statements coincided (and not by pure chance of historical accident) with the very inception of our country. In the second place, probably in no other society has the dichotomy inherent in these two institutions been so extensively debated and lucidly recognized in the precise historical context of adopting them as the law of the society. Also, for purposes of simplification, two documents can well serve to polarize the controversy preceeding the adoption: The Declaration of Independence, and the Constitution of the United States.

The Aims of American Society

Although the basic documents of American social theory are not completely mutually exclusive as to content, they do possess a basic dualism in philosophical emphasis. Two broad confluent streams of philosophical thought can, with a remarkable degree of precision, be charted as the ideational sources for these documents. From the French Enlightenment--a revolutionary scientific rationalism evolves into a romantic radicalism with its flaming, uninhibited, "Liberty, Equality, Fraternity" and thus into the Declaration. From the English Enlightenment--a utilitarian liberalism emerges to produce a considerably less inflamatory, and more business-like, "Property, Security, Liberty". The Constitution is, preeminently, a product of this latter tradition.

Accepting the fact that the two institutions of private property and political democracy have their fundamental theoretical expression in the documents of the Declaration and the Constitution, a further distinction must be made insofar as they represent the basic aims of American society. For all its imperious demands for "equality", "freedom" and "justice", the Declaration remains a revolutionary statement of aspirations, i.e., a document with no legal status. On the other hand the Constitution is the organic law of the United States. This distinction is important to point out because all too often it is vaguely assumed that, somehow, the two documents lumped together form the basic law of the land.

Although the first ten amendments do incorporate into the Constitution some of the spirit of the Declaration, the emphasis of the former is clearly not toward the protection of "liberty" but of "property".

It has been stated as a thesis for examining the aims of our society that these aims harbor a fundamental dichotomy. That this conflict is not completely ineluctable is demonstrated by the fact that the Constitution and its judicial interpretation has not been completely inflexible, and this point will be dealt with later.

As mentioned previously, there is considerable confusion in the minds of Americans today as to the basic aims of our society. This is not to imply that the mass of people in America exist in a lethargic state of "aim ignorance" in which they have no idea as to the purpose of their existence. People do have ideas of what they want out of life and attempt to direct their activities accordingly--with varying degrees of success. All too often, though, the idealized aspirations of people for the "good life" and the "pursuit of happiness" are thwarted by the overweening demands of the prerogatives of property. Faced with such frustration people are told that even though their aspirations are commendable--are "all right in theory"--and really ought to be realized, they are not really "practical" desires because of the "way things are". Thus the confusion.

Irrespective, and in spite of, the essential dualism underlying the theoretical structure of our society, a collection of idealized aspirations has emerged as the "American Way". These aims, formally stated as "Life, Liberty and the Pursuit of Happiness", vary considerably both as to variety and emphasis over the range of groups and classes in America. But, in spite of the number and the variety of frames of reference of the different social norms, certain elements appear to be common to all. These elements are for the most part ideal patterns of behavior and abstracted to their lowest common denominator might be called freedom and plenty. The attributes of these basic ideals are endless and interlocking and while a past president of the National Association of Manufacturers might plead for "the freedom from freedom", a coal miner might strike for the freedom to strike, but both would in all liklihood advocate the freedom from "inconvenience, disorder, and danger" in support of convenience, order and safety. Included in the term "plenty" would be all those attri-

butes of economic well-being. Americans, particularly, have been conditioned to the idea of plenty, and the "good life" is an abundant life. Whatever the individual interpretation, it is unlikely that the overwhelming majority of Americans would reject the idea of a life of plenty in an agreeable and vigorous environment.

The Practicability of These Aims

In a sense, the aims of American society have always been freedom and plenty. It is (again) no historical accident that the Declaration of Independence and Adam Smith's Wealth of Nations both appeared in the year 1776. In the extended and complex disintegration of feudal society in the old world, a pattern of economic practices called "Mercantilism" (a sort of preliminary "Capitalism") flourished alongside a more slowly developing industrial revolution. Consistent with the needs of the times, economic theoreticians proved conclusively that "wealth" meant an accumulation of bullion and that a nation was rich to the degree that economic resources were exchanged for this metalic hoard. It worked out, naturally enough, that a corollary of this accumulation of metal had to be a monopoly--for this was the period of the great trading companies.

The inexorable encroachments of the industrial revolution with the concommitant emergence of a new class of "entrepreneurs" inevitably undermined and replaced the old patterns of Mercantilism--never completely, but after a certain point, decisively. To hasten the labor and assist the delivery of this infant new economy "Capitalism", theoretical sanctions were needed. Adam Smith came forth in counsel for the accouchement with his classic combination of laissez-faire free trade, division of labor, and, among other things, a special plea for the repeal of the corn laws. (A combination of Mercantilist and aristocratic agrarian interests were forbidding the import of grain, and hence, keeping the wages of the manufacturing workers at an inflated level.)

Thus was America presented not only with a political doctrine shorne of the restraining remnants of feudalism, but also with an economic theory precisely tailored to a landscape crying for exploitation. Any other combination of politics and economics just wouldn't have worked in this bountiful wilderness.

Armed with theoretical sanction, supplied with an ever increasing labor force, and surrounded by a combination of easily worked resources adjacent to water power and navigation, an uninhibited cadre of bucaneering entrepreneurs set about the construction of the "American Way" with an almost unrefined eagerness. The results are well known. The biggest, the best, the fastest, the etc. est.

But something happened en route. Laissez-faire became a working axiom only if you were big enough and as the expansion to the frontiers ground to a reluctant halt, the population became acutely aware of depression and unemployment. Poverty flourished amidst plenty while the magical technology displaced workers as its output increased.

Thus today an elaborated division of labor and almost human machines can produce an output surpassing the wildest dreams of Adam Smith's pinmakers. But, the theoretical sanctions no longer apply.

To achieve freedom and plenty today (always a new and relative evaluation) means to be freed from the careless--but then tolerable--individualism of yesterday.

The Realization of These Aims

The adjustment of old legal sanctions to new social needs has, in the past, been a process of some considerable difficulty. Each concession gained toward a wider interpretation of the "General Welfare" has come about only as the result of a widespread expression of dissatisfaction with "things as they are".

The aim of a "life of plenty in an agreeable and vigorous environment" will only be realized as a certainty for the majority of Americans when this majority will no longer accept "things as they are". Already the theoretical foundations for this new conception of political democracy are well developed. Of prime importance among these theoretical tools is the process of democratic planning.

Present Urban Development; A Result of a Conflict in These Aims

In pursuing its aims of freedom and plenty American society has been eminently successful in providing the material benefits of an ever-rising level of living without impairing its birthright of political freedom. However, the path of progress has not been uniformly even if examination is made of the form of the present urban environment.

The rising crescendo of urbanization in the United States during the past century has been due largely to rapid industrialization. At the present time over 50% of the country's population live in the 168 metropolitan areas of 50,000 inhabitants or more.

In very general terms the periods of growth of American cities can be summarized:

1) Pre-1850: Cities relatively small and uncongested, growing slowly, increasing commercial activity causing some rural-urban migration.

2) 1850-1900: Extremely rapid urbanization with development of badly congested urban centers. Included as decisive factors were: a) introduction of the factory system dependent upon steam power and congregating in cities; b) large-scale immigration from abroad forming a cheap and impoverished labor force; c) railroad development causing a building up of the central city as a commercial and industrial hub; d) mass transit inauguration allowing for outward relocation of well-to-do population, but poor forced into central tenement districts.

3) 1900-1950: Marked decentralization of the nation's cities and the development of an uncontrolled and unplanned urban sprawl, due especially to the influence of rapid mass transit and the automobile. Industrial decentralization has been a more recent characteristic.

During the past twenty years the outstanding feature of urban growth has been the rapid and haphazard development of the urban fringe areas. While suburban incorporated places have grown faster than central cities, these in turn have been outstripped by unincorporated communities.

This pattern of urban growth has brought with it innum-

erable problems. Central congestion of transportation in cities encumbered with street layouts meant for the horse and buggy has forced them to improvise to meet the demands of the automobile or to remain crippled with circulatory constriction.

Urban blight has been a product of uncontrolled and unplanned growth lacking adjustment to meet the needs of the people. Thus, life in urban centers has become more and more squalid and intolerable while the health, safety, and morals of millions of Americans are being seriously affected by substandard housing.

Yet, urbanization cannot and must not be considered exclusively an evil process. The city has played, and will continue to play, the leading role in the evolution of American cultural, technological, and economic life. Urbanization has greatly assisted in producing our high level of living, and has furthered the attaining of our aims of freedom and plenty, in spite of the negative features described above.

Urban sprawl has been the product of uncontrolled outward expansion of cities. The journey to work has been stretched farther and farther with each technological advance in the transportation field. The desire of city dwellers to seek a semi-rural environment has brought about the transformation of peaceful peripheral agricultural areas into busy residential suburbs, ever extending the distance from places of work.

The recent trend toward urban decentralization, although more dramatic in its suburban residential aspects has also included the outward movement of large industrial and commercial concerns, once considered as the core of urban centralization. Advances in communication, transportation, and industrial techniques have allowed these activities to locate outside the central city where land values are markedly lower.

Although the central city has experienced this decentralizing tendency it still has many important and decisive functions to perform. Those which it can do most efficiently, such as central governmental administration and largescale financial direction, are generally regional or super-regional in character, and their importance will increase as the larger areas expand. The central city also best provides certain types of cultural and entertainment facilities, statewide and national convention facilities, certain commercial services, distribution warehousing, wholesale produce marketing, special medical and clinical services, as well as

serving as a major transportation and communications hub. The efficient performing of central city functions, however, is severely hampered by the imperfections of physical plant, especially when the latter is forced to accomodate a population many times that for which it was built.

The cult of bigness has dominated the philosophy of city development. Thus, each urban agglomeration has vied with the others in the effort to become numerically supreme. Considerations such as optimum community size and the best utilization of land have been ignored in the mad headlong race toward primacy in numbers.

Although industrialization and urbanization have been accompanied by great progress, much of this has been made at the expense of the public welfare. People have been so aggressive in their development of the means of individual living that they have neglected many of their common interests. Thus we see cities with blighted living areas, insufficient parks and playgrounds, obsolete and poorly managed public transit, inefficient and congesting ribbon commercial development, and the general uncoordinated nature of government activities. All these have developed largely because communities have not acted to adequately meet social needs.

Thus, we see that in striving to gain its goals of freedom and plenty American society has allowed one of the embodiments of those aims--its cities--to develop along lines incompatible with those aims. If the purpose of these aims is to produce an urban slum dweller, ill-housed, surrounded by darkness, noise, crime, and disease on one hand; or the harried suburbanite wastefully spending from one to three hours per day traversing miles of urban sprawl between home and work, then we must conclude that our cities have indeed succeeded. Obviously, such is not the purpose of these aims; therefore we must reexamine our cities to determine how future urban development can be guided along lines more in keeping with the goals of American society.

In this study the attempt will be made to demonstrate how the present trend of urban development can be redirected in such a way that future growth can be guided to provide an invigorating, efficient, and socially beneficient environment successfully integrating living and working activities. By employing contemporary city planning principles and processes it will be possible to provide an entire urban environment worthy of the aims and aspirations of the American people.

URBAN DEVELOPMENT IN CONTRA COSTA COUNTY AND THE SAN FRANCISCO BAY AREA

The San Francisco Bay Area

Description

Few regions in the world offer the variety of environments for living, working and playing that is found in the San Francisco Bay Area. The early settlement and growth of this region can be attributed largely to its natural topographic features and its strategic location in relation to economic activity in the Far West.

Dominant natural features of the region are the series of landlocked bays and straights, almost completely rimmed by a relatively narrow band of flat land and a larger ring of hills and mountains. San Francisco Bay, the main inner body of water, opens to the Pacific Ocean at the Golden Gate, a mile wide channel between two massive peninsulas. The City and County of San Francisco, the major nucleus of activity in the region, is located on the hilly tip of land just south of this opening. The north side of the Golden Gate is walled by the abruptly rising hills of Marin County, capped by the 2600 foot high Mt. Tamalpais.

The Bay extends forty-eight miles north and south and varies in width up to a maximum of twelve miles. The northern section of inland waters narrows and then opens into the smaller and more shallow San Pablo Bay. A deep channel runs through this bay and eastward through the Carquinez Straights to open into the relatively small Suisun Bay. East of this is the delta

region formed by the Sacramento and San Joaquin Rivers, which flow north and south through California's fertile Central Valley. The whole inland water system of bays has a surface of 513 square miles and a 200 mile shoreline.

The nine counties surrounding these bays have a total land area of 7,453 square miles. The narrow band of flat lands surrounding the major part of the San Francisco and San Pablo Bays widens out to the north and south. To the north, it extends into the agricultural valleys of Napa, Solano and Sonoma Counties. In the southern part of the region, the flat lands broaden considerably to form the Santa Clara Valley.

Due to the moderating effect of the prevailing ocean winds, climate in the area lacks violent extremes of temperature; however, there is a variety of climates characteristic of many areas within the region. San Francisco is noted for its cool and often foggy climate, whereas San Rafael, directly north, and Orinda, east of the Berkeley Hills, both about twenty miles from San Francisco, are often 20 degrees warmer during summer months. The wide range of local climates can be attributed to the prevailing winds, the large bodies of water, and the undulating land forms.

Not only the climate, but also the scenic qualities vary considerably throughout the region: bleak and rugged coast line; a bay that is frequently white-capped, often placid, with long bridges and small but abruptly rising isles spotted near its entrance; a cosmopolitan center of tall buildings and hurried tempo; broad views of the sprawling East Bay; industrial yards and docks spreading along the central and northern edges of the bays; not-so-neat and too-neat rows and grids of housing; houses on precipitous slopes, some forming jungles by themselves, others fairly hidden by trees and shrubs; small pockets of living areas, some partially surrounded by water, some fully enclosed by hills; marsh lands and shacktowns; "ranches" of "ranch-type" houses; aging estate grandeur; middle-class jumbles of foreign architecture; wooded hills and canyons; flat and rolling lands of grass and flowers; and valleys and broad plains of small farms, orchards and vineyards.

Growth of the Metropolitan Region

Although the large valleys at the northern and southern

ends of the Bay offer space to hold large populations, these areas have been relatively sparsely settled. San Francisco, bounded on three sides by water, because of its superior port facilities, has remained the center of economic and social activity since the time of the first large immigration of people to the region during the gold rush era. Agricultural communities developed in other parts of the region as the first dash for gold died down. The long, level strip of land bordering the east side of the Bay became increasingly important because of its more strategic location as a terminus for transcontinental and northern rail lines. However, San Francisco retained an absolute majority of the population in the nine-county region until the great earthquake and fire of 1906. After that time, a constantly increasing number of individuals and families settled on the east shores of the Bay, and Oakland quickly grew as an urban center. Many people still commuted by ferry to San Francisco, but there were continually growing opportunities for employment in the other Bay communities as industries developed along the Bay shore and as the population required local services.

Communities in Marin and San Mateo Counties were largely residential in nature, populated by commuters to San Francisco, retired people and vacationers. Small centers developed and grew in the fertile agricultural valleys. San Jose developed as a center serving the shopping and industrial needs of the largely rural population in Santa Clara and Salinas Valleys to the south. Similarly, Santa Rosa, Petaluma, and Napa developed in the northern part of the region.

As the population in the nine counties has continued to grow and as communication facilities have been improved, there has been a growing inter-relation of economic and social activities. Construction of the two bridges in the 1930's, linking San Francisco more closely with the East Bay and with Marin County, has greatly unified both sides of the Bay into a single metropolitan area.

The impact of wartime activities and labor needs during the decade between 1940 and 1950 has increased the population in the metropolitan region by close to a million people. A large portion of this new population has settled in the fringe areas of former urban concentrations. However, there has also been a great deal of doubling up in older residential areas.

Out of this sudden and unprecedented growth in popula-

Urban Pattern in the San Francisco Bay Area, 1948

0 5 10
SCALE IN MILES

Source: See Appendix

tion has resulted an urban sprawl left largely to chance and speculative forces. Insufficient housing and transportation facilities has caused needlessly long journeys to work and traffic congestion. Tracts for housing have mushroomed on land better suited to industrial, agricultural or recreational uses. Existing facilities for recreation and education have been severely overtaxed.

It has been estimated that during the next twenty years the population of the San Francisco Bay Metropolitan Region will increase by approximately another million people. Unless steps are taken now to provide a suitable urban structure for the social and economic needs of this continually increasing population, existing problems will be greatly magnified.

Contra Costa County

Historical Development

Contra Costa County was formed in 1850 as one of the original twenty-seven counties of California. At that time, it included what is now known as Alameda County, which separated in 1853. Since that time there have been no boundary changes.

The history of Contra Costa County starts approximately in 1772 when Pedro Fages, a Spanish explorer enroute to Point Reyes, found San Pablo Bay and Carquinez Straights blocking his way. At the same time he discovered the intersection of the Sacramento and San Joaquin Rivers.

In the early 1800's, Mexican land grants were given to various prominent people in repayment of debts. These grants, known as Ranchos, were the starting point for agricultural development. Towards the middle of the century wheat was introduced and became one of the county's most valuable products. It was grown in the flat valley areas and shipped from the easily accessable river harbors of Pacheco and Port Costa.

With the introduction of agricultural machinery in the late 1800's there was a change from grain production to fruit growing. The eastern portion of the county in

the Brentwood and Byron areas continued in important orchard lands as did the Moraga, Ygnacio, and San Ramon Valleys. Apricots, peaches, pears, and cherries were the principal crops. In 1887 walnuts were introduced and became a major crop especially in the San Ramon and Ygnacio Valleys, which even now produce large crops of walnuts.

Much of the land in Contra Costa County is still being used for agricultural purposes. That which is not used for orchards and the like is utilized as grazing land. Since the early 1900's, however, much of the agricultural land has been absorbed for residential and industrial use. The latter developed initially in the form of the Standard Oil Company's refinery at Richmond. Later, refineries were built by Union Oil at Oleum, Associated Oil at Avon, and Shell Oil at Martinez. Most of the crude oil is pumped directly to these refineries through pipelines from the Southern California oil fields. Located as they are on the waterfront, the finished products and the by-products can be shipped anywhere by water or transcontinental rail lines which serve them. However, the major portion of the output is consumed on the West Coast.

The location of the refineries in the county tended to attract various other industries to the area. The California and Hawaiian Sugar Refinery was established at Crockett, two powder plants at Hercules and Giant, the Columbia Steel mill at Pittsburg, as well as a variety of industries in the vicinity of Richmond.

The first and second World Wars increased the industrial activity greatly. During World War II the waterfront development gave rise to shipbuilding in Richmond and afforded the Federal Government a base for troop transport at Camp Stoneman near Pittsburg.

Upon completion of the San Francisco Bay Bridge, the Broadway Low Level Tunnel, and the East Shore Highway in 1936-38 Contra Costa County entered another phase of development. The Tunnel broke through the barrier formed by the East Bay Hills between most of the County and the metropolitan centers. Immediately, Orinda, Lafayette, and Walnut Creek became bedroom communities within the expanding Metropolitan Bay Area. Easy access was provided to Oakland and San Francisco by the Tunnel and the Bay Bridge. The latter maintains a minimum toll which may be eliminated in 1952. These improvements in the circulation system led to the rapid growth of the above mentioned towns, as well as the more recent devel-

opment in the Pleasant Hills area. A good many of the people living in the new subdivisions commute daily to the urban work centers.

At the same time the extension of the East Shore Highway from Alameda County into Richmond and Contra Costa County provided access to other suitable areas for suburban subdivision, such as El Sobrante east of Richmond. Until World War II these various subdivisions had been only about twenty-five per cent developed. Although the war saw a curtailment of normal housing construction in the residential subdivisions of Contra Costa County, at the same time the Federal Public Housing Authority provided a tremendous increase in housing facilities in areas of essential economic activity. Thus Contra Costa County was able to house a continually increasing number of people during the war years due to its role in the war economy. In addition war-time housing legislation allowed the hitherto small developers (with limited capital facilities) to engage in large scale building activity with only a fraction of the capital outlay normally required for such development.

With the end of the war there came a cancellation of war contracts for shipbuilding and other wartime essentials. This in turn caused many industrial plants to cut back production while many others shut down completely. While the County's industrial development was tapering off the construction industry began to boom as building materials previously scarce became available. The demand for residential building was extremely heavy in the immediate postwar years and has not yet diminished greatly.

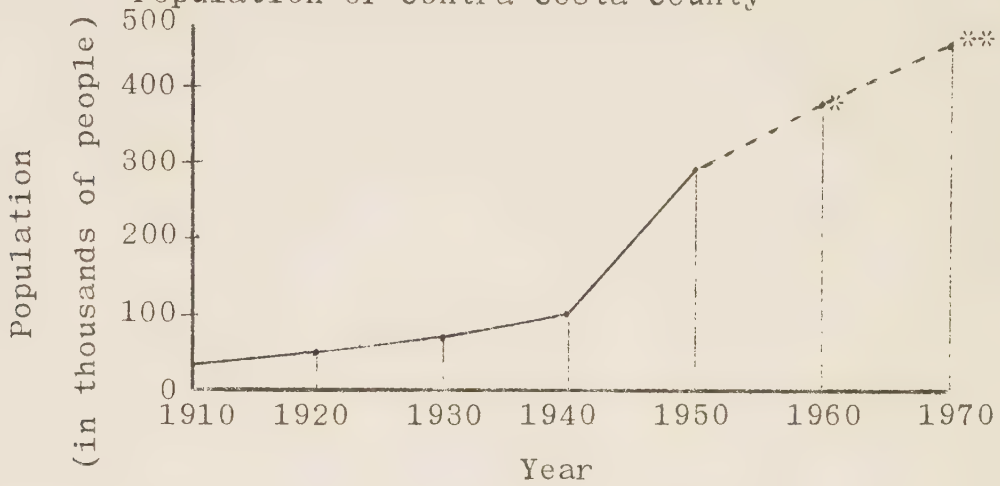
The foregoing illustrates the trends of development in Contra Costa County. The first phase was characterized by simple agriculture later becoming more intensive. Then followed a semi-industrial period which in turn gave way to suburban residential expansion. At present Contra Costa County's economy is characterized by a mixture of agriculture, industry, and suburban residential development. The possibilities for expansion along all of these lines are still very great in 1951, owing to the fact that large areas in the county are still relatively undeveloped (see plate following page 19). However, this expansion must be logically thought out and carefully planned if it is to produce a desirable living and working environment for the inhabitants of the county.

Trend of Recent Urbanization

Population

During the past two decades Contra Costa County has experienced a remarkable growth. This acceleration of urban expansion that began in the late 1930's is still continuing. The county's population grew from 100,450 in 1940 to 297,000 in 1950. This is an increase of approximately 300 per cent. Various estimates of the 1960 population center near 400,000 with an anticipated increase of approximately 100,000 for the succeeding decade.

Population of Contra Costa County

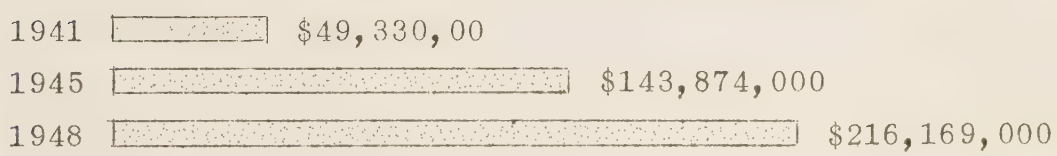


Source: U. S. Bureau of the Census
Note: Estimates by (*) Julian Riley, Civil Aeronautics Commission
(**) San Francisco City Planning Department

Retail Sales Volume

The needs of such a growing population have resulted in a sharply increased demand for commercial services. Retail sales have boomed. The business dollar volume has quadrupled in the seven year period between 1941 and 1948.

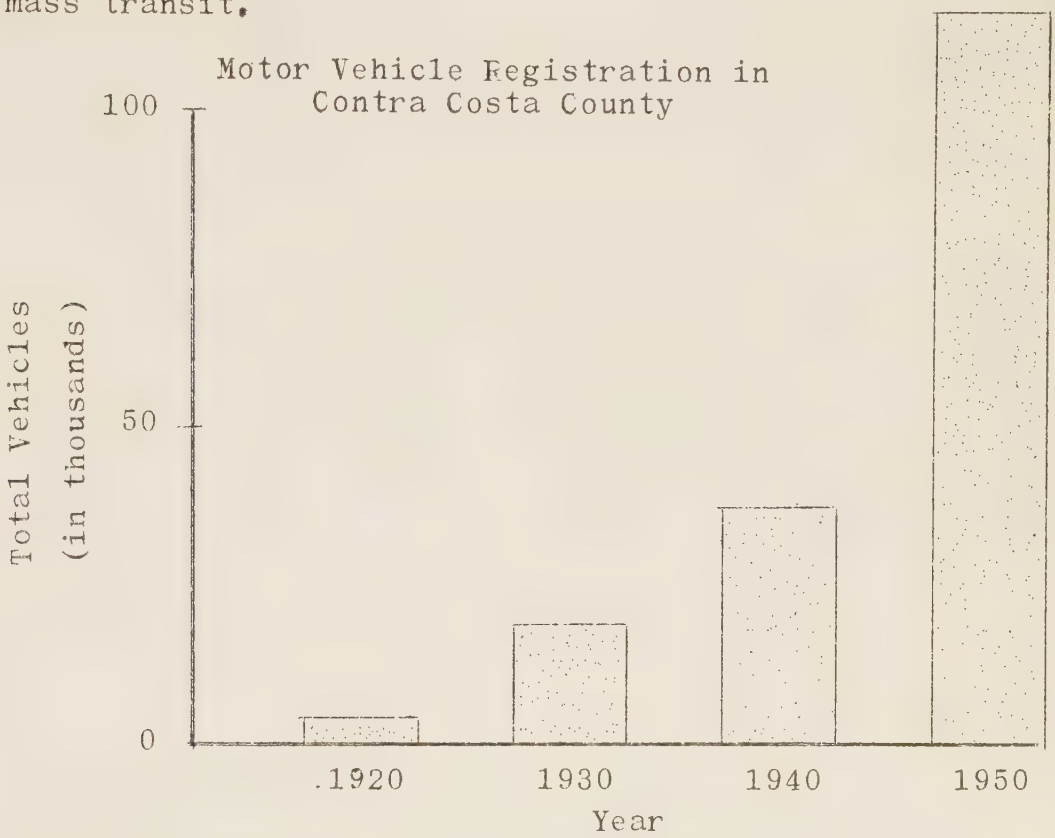
Retail Sales in Contra Costa County



Source: U. S. Bureau of the Census, Census of Manufacturers

Private Transportation

A large segment of the new population settled in the Richmond area close to their wartime industrial jobs. Another element of the population moved inland to the industries located between Martinez and Antioch. The county completely lacked adequate mass transit facilities during these important years of development. Workers were heavily dependent on the private automobiles. The normal upward course of automobile registrations showed abnormal gains during this period. This is tracable to the heavy population increase, the wartime necessity for private transportation, and the lack of public mass transit.



Source: State Department of Motor Vehicles

Agricultural Production

The trend of land use in Contra Costa County is today tending toward industrial and residential uses. During World War II the county became a key military, shipping, and industrial area. The number of acres in agricultural use decreased 13.4 per cent during the fifteen year period from 1930 to 1945. After the war whole farms were subdivided; fruit and nut trees were torn out and homes

were built in their place.

Thus two major factors have contributed to de-emphasize the former importance of agriculture to the economy of Contra Costa County. On the one hand an increased demand for industrial sites has tended toward a rapid replacement of many marginal agricultural uses. At the same time the unrelenting pressure for more and more living space in the ever widening metropolitan development of the East Bay has absorbed even highly productive farm areas.

Industrial Production

There was a large increase in industrial output within Contra Costa County from 1937 to 1947. During this particular decade the number of industrial plants grew nearly 46 per cent and the number of workers employed increased approximately 50 per cent.

Industrial Production in Contra Costa County

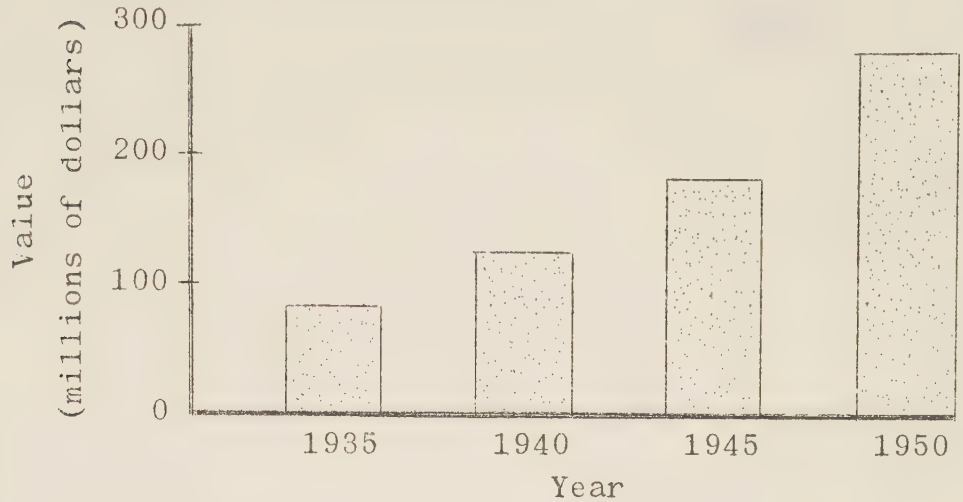
Year	No. of plants	Wage earners	Wages (in dollars)	Value added by manufacturers (in dollars)
1919	163	13,434	19,300,235	68,501,516
1929	113	13,029	20,477,928	70,116,181
1939	126	13,787	22,124,608	82,460,762
1947	168	24,316	79,546,000	155,142,000

Source: U. S. Bureau of the Census, Census of Manufacturers

Assessed Property Valuation

The following chart shows assessed valuations of real property in Contra Costa County. It covers the last 15 years during which time the assessment policy has remained relatively consistent. This makes the data more helpful for comparative purposes and clearly indicates the upward surge of development in all types of property. The statistics on the number of building permits issued during this same 15 year period are not readily available. This is unfortunate since the figures would emphasize the important role that residential construction has played in Contra Costa County.

Assessed Property Valuation in Contra Costa County



Source: Office of the County Assessor

A Qualitative Evaluation of Recent Development

The popular American belief is that development is "progress" and that "bigness" is necessarily self-justified. The question, as yet unanswered, is whether there has been a contribution to better living through all this "progress".

We could easily be led to the conclusion, based on the foregoing type of statistics and quantitative data, that definite developmental progress is being made in Contra Costa County. Industry is expanding. Population growth is rapid. Residential construction is proceeding at a very high level of activity. Business is finding an abundant consumer market. Everything that statistically indicates economic improvement is still climbing upward. The county should be progressing.

The danger in accepting such a conclusion lies in the acceptance of a purely quantitative analysis. Development per se can be either good or bad. It can be efficient or inefficient and wasteful. A quantitative conclusion will never give us the complete picture without distortions.

Unfortunately, the growth of Contra Costa County immediately before, during and after World War II proved to be bad development. Technology has reached a high

Land Use in Contra Costa County and the East Bay, 1950

Source: See Appendix

level while the environment has failed to incorporate the advantages and lessons it teaches. The urban pattern has been uncontrolled, sprawling and chaotic, trying to reach an unknown destination. It has spread through the county with poor planning and little forethought. This is the present trend which shows little promise of stopping. There has been a steady and unrelenting conflict between conditions as they exist and the mistaken idea that Contra Costa County is "progressing".

The county has yet to awaken to the need for coordination and comprehensive planning. Yet there are many obvious clues throughout the county that disprove the popular belief that all goes well. The first inkling of a flaw occurs in the heavy incidence of unemployment within the county immediately following the termination of war hostilities. The Richmond industrial area offers a case of particular significance.

In 1940 Richmond had a population of 23,000. By 1943 there were over 100,000 workers in the shipyards alone. They constituted a tremendous labor force in critical need of housing. The problems of the city were abnormal. Their post-war problems were even worse. With the war industry drastically reduced the relief roles became gigantic. The county sagged under the financial strain. Obviously this type of "boom and bust" economic cycle can prove disastrous.

Physical problems are numerous and the countryside is being spoiled by a lack of aesthetic consideration in development. Industry has been illogically located. Although efficient inside, the industrial enterprises neglect the overall site considerations so necessary to procure the maximum benefit from their investment.

Residential tracts have sprouted up entirely too far in advance of the utilities and highways needed for their proper development and service. The tract sites, for the most part, are modified gridiron patterns. Most of the homes are unimaginative, monotonous, and rapidly depreciating into country slums.

Considerations such as the most convenient location or adequacy of shopping centers and public facilities have been disregarded in the wild rush to take full advantage of the residential building boom.

The highway system has proven miserably inadequate. The one tunnel connecting the East Bay area and central

Contra Costa County is fast becoming a dangerous bottleneck. Commercial interests have rooted themselves beside the major highways and attempt to scrape off sales by retarding traffic as much as legally possible. The function of the major highways is almost lost amid the resulting chaos and congestion.

These are only a few of the problems created by recent development in Contra Costa County. They are not demonstrated in the quantitative discussion. They are included here to illustrate that "bigger and better" is a phrase that can carry a distorted connotation. The problems do exist. They will multiply in number and severity if the present development trend continues essentially unplanned, uncontrolled and uncoordinated.

The county has well grounded legal controls but without public backing and more help they can only make a rather futile effort to stem the tide of bad development. The agencies in the county most deeply concerned are continually fighting a negative battle against overwhelming odds.

The Future of Development in Contra Costa County

The phase of rapid expansion presently characteristic of Contra Costa County shows few signs of slakening. Continuing rapid development of residential, industrial, and commercial areas will continue much as at present--unplanned and largely uncoordinated. This conclusion is obtained from the results of a sample survey taken of key public and private bodies actively concerned in development.1/ Fourteen such agencies were contacted, including Federal, state, county and local government departments, utilities, a newspaper, a railroad, and several private land developers. Most of the persons contacted were concerned with the public relations of each agency and were well qualified to define the scope of future operations.

The results of the survey indicate that recent residential and commercial developments have arisen en mass without consideration of related activities. Many have been characterized by ribbon-like developments along major highways (e.g., Lafayette-Walnut Creek), and along the northern Bay shore. Industries have also been located in a similar manner, mostly contiguous to deep water port facilities (see plate following page 19). The location of many of the county's fine new schools

has been based upon guesses of future patterns of growth.

The amount of coordinated activity or lack of it gives a definite clue to the possible future growth pattern. The results of the survey indicate that there is no long-range and very little short-range planning. This is true for both the operations of each private and public agency as well as for inter-agency activities.

The need for a future coordinated effort is recognized by most of the agencies contacted, many feeling that a regional planning agency or similar coordinating body is required. Most feel that the county planning department has been very helpful and that it should be strengthened. A small minority looks upon government planning as bureaucratic interference and prefers to proceed along present lines.

Three significant conclusions of the survey are:

1) There is little planning being done now by the public and private bodies interested in development.

2) Coordination between these activities is virtually non-existent.

3) There is a definite need for over-all coordinated planning.

Estimates of future population in Contra Costa County range as high as 2,000,000 by 2000 A. D. with increases up to 200,000 in the next 20 years. Such an impressive expansion of population must be provided for as regards living, working, and recreation areas, as well as by furnishing necessary public facilities. In order to provide the most suitable environment the control of future uses of land to prevent the extension of an undesirable urban pattern will be required. This implies the need for planning bodies--regional, county, and local--to properly guide future growth, to aid in coordinating related activities, and to serve as a source of basic information for all those concerned in the development of the county.

REGIONAL PLANNING AND THE DEVELOPMENT OF NEW CITIES

Suggested San Francisco Bay Area Regional Plan

The Need for Regional Planning

There is an urgent need today for controlled development of the San Francisco Bay metropolitan region. Various city and county planning commissions throughout the region have done a great deal for their own communities during the past ten years. However, almost no coordinated effort has been made by these planning organizations. What is becoming a recognized fact by many city planners and an increasing number of civic leaders is that not all problems can be solved locally. Through proper planning on a regional basis the Bay Area can serve adequately the existing and future needs of its people.

Coordinated effort on a regional plan can provide for adequate rapid transit facilities to serve the whole region. Also by combined effort new industrial areas of proper size and location can be developed in accordance with forecasts of the amount and type of industry that will be needed. Size of existing and new communities and spatial relationships between and within them can be planned in accordance with social and economic needs. Regional planning can also coordinate the development of adequate recreational facilities for the present and future population.

Regional planning should not be assumed to take the place of city and county planning. On the contrary,

it is concerned with the requirements of the whole region and works out broad, over-all concepts from which city and county planning organizations can work out the details for local application.

Effective planning for the metropolitan region must be based on physical, social and economic needs of the people within the area. These needs can be expressed in terms of objectives and planning principles. The physical organization of facilities to meet these needs will require the development of new powers on all governmental levels.

Basic Assumptions for Metropolitan Regional Planning in The Bay Area

In planning for the future certain basic assumptions must be made. Those derived to guide in the development of a regional plan follow:

1) The nine-county area is the appropriate area that should be considered in developing a long-range, comprehensive, general master plan for the physical development of the metropolitan Bay Area community.

2) The time span for those concerned with long-range, comprehensive planning in the Bay Area should be at least a twenty year period.

3) There will be a population increase of approximately 1,000,000 by 1970 (from the present 2,500,000 to 3,500,000).

4) The social and economic needs of a community of given age structure and size will remain sufficiently stable to require the provision of land areas and public facilities for a definite and limited number of social and economic activities.

5) Industrial and commercial expansion will be sufficient to provide for a suitable economic base for the metropolitan Bay Area's population.

6) Water, power, and materials resources will be made available to the individuals and industries within the Bay Area sufficient to assure

a sound economic base and a high level of living.

7) In addition to city and county planning agencies, there will be established during the next twenty years a permanent, public, advisory regional planning agency capable of preparing and maintaining a comprehensive, general long-range plan to guide the physical development of the nine-county metropolitan area.

8) New powers for physical planning on all governmental levels will be made available, including powers for the control of land values and increased control of land use.

Social and Economic Objectives for Metropolitan Regional Planning in the Bay Area

Local objectives serving to guide the development of a regional plan provide:

1) An environment that will put each individual within easier reach of his goals and that will help make possible a decent life for families of all social, ethnic, and economic groups.

2) Facilities for groups of individuals having common environmental needs, such as a) families, single persons, young people, and old people in relation to the residential neighborhoods which serve them; b) trade, distribution, service and professional workers, and consumers in relation to the shopping districts wherein they work and shop; and c) children between fifteen and eighteen in relation to the special facilities, including high schools, which they require.

3) Improvement and better integration of neighborhoods, communities, recreation and cultural facilities, commercial and industrial districts, to meet the changing needs of individuals as they pass from infancy to old age.

4) A maximum locational stability of population within the metropolitan area by providing for a wide range of occupational, living, social, and cultural needs within each community. At

the same time provision for movements necessary to meet the changes in economic opportunities and family requirements, and the desireable movements to gain new experience and avoid development of provincial attitudes.

5) Equal opportunity for all economic, ethnic, and social groups to utilize such facilities as transit, schools, recreational areas, cultural centers, etc. Because it is assumed the level of living will be rising, standards for these facilities will be increasingly raised.

6) A wide variety of living accomodations in residential areas so that there will be a maximum choice for all individuals and families to live in the types of dwellings and neighborhoods they deem most desirable without segregation by social, ethnic, or economic group.

Economic objectives for metropolitan regional planning provide:

7) A rising standard of living that makes possible and requires more and a greater variety of goods and services, freedom of occupational choice and advancement, shorter working hours, higher per capita income, more leisure time, and a richer, more varied civic and cultural life.

8) An economic base of the metropolitan Bay Area affording the people of the area the maximum opportunity for full employment and the highest possible real income.

9) Integration of the future economy of the Bay Area with the larger economic region of Northern California.

Principles for Metropolitan Regional Planning in the Bay Area

Planned Expansion, Decentralization, and Regional Integration

1) The industries and people being attracted to the Bay Area and the industries and people who are now in or moving outward from the central districts should be given the opportunity of

locating in independently situated communities.

2) There should be well-planned extensions of existing small towns into cities of moderate and limited size and density, with permanent physical separation from other cities.

3) New cities of limited size and density in suburban and rural locations should be planned to accomodate the overflow of industries and people beyond the capacities of urban centers and expanded cities.

4) There should be an increased development of open space integrated in and around the urban areas--a linking of an expanded "green belt" with the "blue belt" of the Bay and Ocean for recreational use that meets the needs of all age groups.

5) The easy movement of people and goods should be encouraged throughout the area by a) provision of a regionally integrated system of transportation facilities such as airports, harbors, roads, paths, and rail lines including mass transit; and b) provision of working, shopping, recreational and cultural areas in close proximity to residential areas, thereby making it possible for the individual to shorten their daily journeys.

6) There should be a progressive redevelopment of the urban centers into better living, working, and recreational areas, and urban centers should be limited in size and in density by a planned use of space.

Planned Reorganization of Central Districts

1) The central cultural, commercial, industrial, and administrative districts of the Bay Area in San Francisco and in the East Bay should be better organized to provide for those urban functions which should serve the entire metropolitan area and which require central locations.

2) Central districts should be related to the rest of the metropolitan area by an integrated system of transportation and also by the provision for wedges of open space linked to the larger

areas of open space surrounding the central districts.

3) Residential areas adjacent to or forming parts of central districts should be limited in size and density, and reorganized into clusters of communities and neighborhoods, and should be organized to provide better living conditions for all families who choose or find it necessary to live near to or in the central districts.

4) A more permanent, more unified, more beautiful architectural and landscaped setting should be planned, and natural or man-made features of cultural or aesthetic importance to the region should be preserved.

Description of Suggested Regional Plan

Background of the Plan

Before any long range plan can be made for the development of a new city in an outlying portion of the Bay Area, it is necessary to establish a framework for the development of the metropolitan region as a whole. A plan for the Bay Area, general though it may be, emphasizes the inter-relationships that we expect to exist in the future. "Planning" such an individual town within such a context is much more realistic and liable of realization than would be any attempt to "plan" a town that was developing in a region experiencing undirected, random growth.

Some three weeks were spent by student groups studying the region and preparing general schemes for its development. The final plan (See plate following page 30) is the outgrowth of these preliminary findings. The plan as shown is only of the most general nature. Additional study undoubtedly would result in modification of the scheme but it is believed that the general character of development would remain the same.

Assumptions

The assumptions underlying the suggested plan are:

1) That the present growth of the Bay Area and the natural topographic features must serve as the

basis of a future pattern of growth.

2) That the inhabitants of the region would actively support effective programs of improving their ways of life.

3) That we can have smaller, independent communities, integrated with a central metropolitan core, to accomodate the increased growth of the Bay Area while avoiding senseless urban sprawl.

4) That the presence of the bay within the metropolitan area is a unique feature providing numerous changing vistas and open spaces.

5) That the hills and coastal mountains in outlying portions of the nine county area serve to limit the area of intensive metropolitan development and to create an enclosed setting.

The Plan Described (see plate following page 30)

The major elements of land utilization can be described as follows:

The inner urban areas. Characterized by high land coverage and by extensive industrial and commercial usage these areas include the intensively developed land areas on both sides of the Bay.

The outer urban areas. These areas are used less intensively than the preceding. Developed predominantly as suburban residential areas they do, however, include some commercial and industrial uses.

The outer urban area centers. To conveniently meet the commercial and cultural needs of those living outside the inner urban areas, certain regional sub-centers are necessary. Such centers, properly located, eliminate wasted time and needless travel.

The outer region centers. These outlying cities of limited size are presently existing cities developed to a size of from 50,000 to 80,000 persons with a majority of the inhabitants working within the city itself. As diversified units with a sound economic base they also offer cultural and educational facilities consistent with their size. They serve as commercial and cultural centers for much of the surrounding area as well as for their own inhabitants.

The smaller independently situated communities. These are smaller existing and proposed cities ranging in size from 25,000 to 50,000 persons. They offer such diversity of employment and cultural facilities as can be provided in cities of this size and are dependent upon the outer region centers for some of their cultural and commercial needs.

The Bay. A permanent open space, the Bay offers the opportunity for both industrial and recreational development. Carefully planned and executed, such development will serve as an integrating and cohesive factor for the region.

Regional recreational areas. These large areas are particularly well suited for certain types of outdoor recreation (hunting, fishing, hiking, scenic appreciation and nature study, etc.) and should be reserved for these purposes by restricting intensive development. Some of these already are set aside for such uses. They also serve to shape the region but do not block necessary communications to other areas.

Surrounding the areas of urban development is the open countryside, constituting the greater part of the region. Furnishing a refreshing and desirable contrast to the more intensively used areas, it is of great importance in providing convenient and accessible open space for the enjoyment and use of the inhabitants of the region. Although the major portion of the open space is devoted to agricultural uses, it also includes the large regional recreational areas and those areas not used by man.

Transit

A rapid transit system is necessary to rapidly and efficiently move large numbers of people. Both rail and bus service are needed in the network that will be required to meet the demands of the Bay Area. All the major urban centers will be effectively linked by this system.

The generalized plan suggested here(turn page)consists of three major north-south routes connected to each other by a number of east-west lines.

The north-south routes consist of the following: 1) a western line passing to the west of San Francisco Bay linking Sonoma, Marin, San Francisco, San Mateo and Santa Clara counties; 2) a central route skirting the

Regional Plan for the San Francisco Bay Area

INNER URBAN AREAS

OUTER URBAN AREAS

REGIONAL RECREATIONAL AREAS

OUTER URBAN AREA CENTERS

OUTER REGION CENTERS

SMALLER INDEPENDENTLY SITUATED CITIES

RAPID TRANSIT AND FREEWAY SYSTEM

DANVILLE

0 5 10
SCALE IN MILES

eastern and northern shores of the Bay connecting parts of Marin, Sonoma, Napa, Solano, Contra Costa, Alameda and Santa Clara counties; 3) an eastern route passing through central Alameda and Contra Costa counties directly serving the major population centers in this area, extending northward across Carquinez Strait and into the Napa Valley, and with a southern terminal in Santa Clara County.

Three cross routes link the north-south lines. One joins Marin County with the Richmond area; another connects San Francisco with the Oakland area and thence into central Contra Costa County; and the third links San Mateo County with the southern parts of Alameda County.

Expressways

Properly designed expressways are needed to accomodate the ever-increasing volume of automobile and bus traffic within the region. The expressway network would parallel and extend beyond the transit network described above. Major freeways would enter the region from the north through Sonoma County, from the east through Solano County and Alameda County, and from the south through Santa Clara County. An additional crossing from San Francisco to the East Bay communities would also be required.

Railroads

To complete the integration of the many communities, a rational rail system is necessary. This requires main lines linking northern Contra Costa County, the East Bay communities, northern Santa Clara County, and the San Francisco peninsula. Feeding into this central core would be lines from the east through Solano County, as well as through Alameda County, and from the south through Santa Clara County.

The end product, then, is an integrated unit; a region supplying a diversity of living and working arrangements to its inhabitants. The different communities are linked, each with the other, so that maximum benefit may be gained from our modern technology.

New Cities in the San Francisco Bay Area

Description of the "New City" Concept

As originally conceived by Ebenezer Howard in 1898 and modified by subsequent British experience the "new city" concept (synonymous with the British "garden city" or "new town") offers to modern urban society a means of preventing the evils of unchecked growth and presenting in its stead a framework for urban life aimed at providing the best in a living and working environment.

"New cities" are not intended to replace existing cities, but are proposed as alternatives to an unending extension of urban areas. Future expansion of city populations together with the relocation of excess populations from redeveloped urban centers are factors which require consideration of the form that future urban development should take. Recently the problem of urban dispersal has also been considered from the point of view of national defense.

Based on Howard's principles the new city is characterized by these principal features:

1) The ultimate size of the city is controlled both as to population and area, thus preventing undesirable sprawl and reducing the journey to work.

2) The reservation of a permanent greenbelt surrounding the living and working areas of the city serves to provide open space convenient to all residents. The greenbelt is usually devoted primarily to agricultural and recreational uses.

3) Sufficient commercial and industrial activities are fostered to provide the city's residents employment within the community as well as to give the city a strong economic base.

4) Single ownership of the entire city site (including greenbelt) by a private or public development corporation is required to ensure proper development.

5) The city is designed to provide opportunities for a varied and vigorous community life on the

part of all inhabitants.

The new city can be incorporated into regional plans calling for urban decentralization as well as for the settling of new inhabitants in a metropolitan area. In such cases the location, size, and character of these communities must be considered in the light of a regional plan.

British Experience in New City Development

The British "new town" concept was accepted in 1946 as a cornerstone of that country's urban development plans. This action, however, was preceded by a long period of experiment during which its early proponents, under the effective leadership of Ebenezer Howard, successfully initiated and constructed two new planned communities of limited size.

In both instances private development corporations were formed to acquire rights to the sites and to supervise the planning and construction of the cities. The first new town, Letchworth, was begun in 1904 upon a virtually open site of 3826 acres situated about thirty-five miles north of London. Although growth was slow due to the limited capital available the city has developed into a vigorous industrial community of 21,500 inhabitants. Its ultimate population is to be 35,000.

The success of the first garden city led to the hope that Britain would officially sanction this form of urban development in planning its housing programs following the first world war. Instead, however, new construction took the form of further suburban development, creating greater sprawl and congestion.

Under the stimulus of Howard a second experiment, Welwyn Garden City, was initiated in 1920 as a completely private operation. A site of 4231 acres was purchased twenty miles north of London in Hertfordshire. Welwyn has now developed into a city of 18,500 inhabitants, with an ultimate maximum population of 36,500 planned.

Faced with the tremendous task of rebuilding its bombed and blighted cities the British government undertook several surveys during the years of the second world war in an attempt to study and recommend the form that these necessary programs should take. The unique problem of London was studied and a plan for Greater London was de-

veloped by Sir Patrick Abercrombie describing the form of future development of the metropolis. Realizing that the great central congested areas would, of necessity, be rebuilt at lower population densities it was recommended that excess population taken from London's center be settled in a series of eight new towns located in the peripheral area of Greater London.

In 1946 the New Towns Act established the government policy of developing new towns throughout Great Britain. Twenty sites have been designated by the Minister of Town and Country Planning, and public development corporations have been established to direct the planning and construction phases of development. In all cases long range development plans are developed for the new towns, these being integrated into the over all regional and national plans.

It is the intention of the British government that each of these projected new towns will accomodate from 25,000 to 80,000 inhabitants, depending upon the purpose of establishment, the existing site conditions, and the local requirements. Each will be surrounded by a definite greenbelt area, and will possess the necessary industrial, commercial, recreational, and public service areas required for a well developed economic and social community life.

Appropriateness of New City Development in the Bay Area

The phenomena associated with twentieth century urban growth are not restricted to one particular country or region, but are characteristic of all large expanding Western cities. Thus, the problem of continued chaotic suburban expansion faced by British planners in London, Glasgow and Manchester can be found in any large urban area in the United States.

The San Francisco Bay Metropolitan region is undergoing a similar pattern of expansion. During the ten year period between 1940 and 1950 the nine county area experienced a population increase of 917,066 inhabitants or 52.8 per cent. Stimulated by the introduction of war industries and installations and the corresponding influx of war workers a tremendous expansion in areas devoted to urban activities occurred following 1946.

Vast open spaces contiguous to the central cities were soon overrun by large-scale suburban developments. The

lines of suburban advance are now being pushed further and further out into the open country in an effort to appease the apparently insatiable appetite of the home-seeking public.

The problems of suburban sprawl, circulation strangulation, increased journey to work, lack of adequate community facilities, and governmental disorganization are common to all similarly expanding areas and are being increasingly felt in the Bay Area.

It thus follows that, given these conditions, attempts should be made at present, before further damage can be done, to alleviate the injurious conditions and to study methods of providing desirable future urban development in the Bay Area.

It is proposed that new cities be developed as contained areas of urban growth in the Bay Area, rather than allowing suburban expansion to spread indefinitely. This study will take one of the many possible sites for such new city development, study its present situation and prepare a plan for guiding its growth.

DANVILLE AS THE SITE FOR A NEW CITY

Choice of the Site

Criteria of Selection

The selection of suitable sites for new city development in the San Francisco Bay Area was guided by considering a series of desirable criteria. That many such sites exist in the Bay Area has been indicated in the suggested regional plan (see plate following page 30) but as this particular study was restricted to Contra Costa County only possible sites in that county were studied in detail.

The following criteria were employed in evaluating sites:

A. Regional criteria

1. Desirable relation to regional pattern of population distribution, economic and other activities:

   a. Reasonable time-distance from existing or possible future nucleus of economic and social activities requiring a population larger than a single new city.

   b. Sufficient time and space separation from such a nucleus to promote a desirable degree of community self-sufficiency.

   c. Surrounding open space suitable for agri-

cultural and recreational development, forming a "greenbelt".

d. Separation by open space from other urban concentrations to

1) provide an independently situated community, and

2) prevent problems of congestion.

e. Close proximity to existing or possible future regional or state recreation areas.

2. Desirable relation to circulation pattern:

a. Close proximity to existing railway and expressway network.

b. Close proximity to probable rapid transit network.

B. Local criteria

1. Desirable natural physical features:

a. Terrain

1) flat land and land of negligible slope for economic location of industrial, commercial, residential, and other buildings.

2) surrounding areas suitable for agriculture and recreational activities.

3) possibility for strengthening of existing aesthetic features in area--bare hills lose character under an urban pattern; wooded, pastoral or broken areas can provide a better background.

b. Climate

1) no tendency of air pollution

2) no climatic extremes

3) minimum of fog

c. Resources

1) suitable subsoil for economic location of industry, commercial and other buildings.

2) adequate water supply

3) good drainage

4) soil that is suitable for landscaping but with superior agricultural land retained for agricultural use.

2. Desirable developed features. The following would either exist or be capable of development:

a. Circulation

1) access to major vehicular and rail routes

2) access to probable transit routes

3) access to deep water where heavy industry is contemplated.

b. Intensity, types and pattern of land use suitable for a planned expansion into a new city.

1) consolidated land ownership

2) land available for agriculture, recreation and greenbelt

3) isolation from contiguous development.

Danville

The initial step in site selection following determination of criteria was to exclude all those areas in the county that had extensive contiguous development. Other localities were eliminated because of important defects and as a result the initial field of choice was narrowed to eight localities: Antioch, Brentwood, Danville, Martinez, Moraga, Oakley, Pittsburg, and San Ramon.

By weighing and balancing the various criteria of selection the town of Danville was finally decided upon as the site for study. Among the attributes of this loca-

tion the following can be listed as conducive to new city development:

1) Danville possesses a beautiful natural setting, situated in a valley surrounded by oak-studded foothills.

2) The site is a reasonable distance from metropolitan centers (35 miles from San Francisco).

3) Present built-up areas in the San Ramon Valley are fairly scattered and not continuous.

4) Large areas of open space are found, suitable as a greenbelt for agricultural and recreation purposes.

5) Sufficient flat land exists for the location of industrial and commercial facilities.

6) The water supply is potentially adequate for present and future use.

7) Danville is situated on a state highway and a railroad branch line, and near a private airfield at San Ramon.

8) No redevelopment problem exists in Danville.

9) The entire San Ramon Valley is favored by a mild climate, with but little fog or smog.

10) The town is located near regional and state parks.

11) Valley soil is considered good.

12) Natural drainage is good in higher areas but only fair on valley floor.

13) Danville could be included in any future rapid transit system.

The disadvantages of Danville as a new city site can be summarized:

1) Natural drainage in low lying areas is inadequate during the rainy seasons; a sewage system will be required before development can be started.

2) Communications, including transit, are fair at present but will require considerable implementation.

3) The town lacks an appreciable economic base at present. A completely new industrial development will be required.

4) Considerable agricultural land in the valley will be taken for development, but other good farm lands will be preserved within the greenbelt.

5) Scattered ownership of land exists in the Danville area.

A consideration of the foregoing factors of site selection indicates that Danville can serve as a most suitable site for new city development.

Description of the Existing Community

An Historical Description

The history of Danville and the San Ramon Valley can be divided into three phases: 1) the period of settlement as an agricultural community extending from 1826 through the 1870's; 2) a period of slow growth during which the walnut was introduced as a crop and the railroad was constructed; and 3) a period of rapid suburban growth, beginning after World War II, with an even greater potential growth in prospect for the future.

The earliest record of settlement in the valley is that of Jose Maria Amador who received the huge San Ramon Rancho grant (30,000 acres) from Governor Figueroa in 1826. The great ranchos with their buildings of adobe remained the only forms of settlement until the influx of American gold-seekers in the early 1850's. The development of a road connecting Benicia with San Jose and passing through the San Ramon Valley (State Highway 21 follows this route) led to the early settlement of the region once the gold excitement had abated.

The town of Danville itself dates from 1858, the year

that Andrew and Daniel Inman built a smithy on the site. In the same year a trading store was opened to serve the expanding agricultural region and later the Danville Hotel was constructed at the junction of the Tassajara and county roads.

Until the coming of the railroad growth was slow, yet certain important community enterprises were undertaken. Although the first schoolhouse in the San Ramon Valley had been built in 1853 near the village of Limerick (now known as San Ramon) a more pretentious effort was attempted in 1859 under the auspices of the Contra Costa Educational Association. This was a large three-story academy located a mile and a half south of Alamo, destroyed by fire in 1866 and never rebuilt. The size and needs of the valley communities were not sufficient to support such an institution at that time. However, the first grammar school in Danville was opened in 1865.

The first important public building in Danville was the Grangers Hall, constructed in 1873. The grange remained one of the most important and influential organizations in the community up to the present time.

The first church in Danville, constructed in 1876, was the Danville Presbyterian Church, which has continued as a strong force in community life since that date. The first Catholic church in the valley was established at San Ramon in 1860, and at a later date another was opened in Danville.

During the latter part of the nineteenth century a change in the agricultural complexion of the valley occurred as better facilities for handling perishables led to the supplanting of grainfields by orchards. The development of fruit growing, especially pears, greatly increased the value of agricultural lands, yet it was not until the introduction of the walnut industry that widespread speculation in valley lands occurred.

Although the native black walnut flourished without irrigation it was not developed as a commercial crop. With the introduction of the English walnut during the 1880's as a graft on the sturdy and resistant indigenous species, large-scale walnut production occurred.

The town of Danville was described in 1882 as follows: "The little town at present contains among other buildings the handsomest church building in the county; a Christian Church; a flourishing school; a capital Grangers Hall; a good hotel; two excellent stores; and a

number of pretty residences. Its rather crooked main street ever displays an air of business, while its surroundings are wonderfully lovely, as it is guarded by that grim old sentinel, Mount Diablo, whose form, as seen from here, is noble in the extreme."

In 1891 the Southern Pacific rail line through the San Ramon Valley reached Danville, and increased growth followed. Among the fraternal organizations established at this time were the I. O. O. F. in 1892, and the Rebekah Lodge in 1894.

In 1907 a branch of the San Ramon Valley Bank of Walnut Creek was opened in Danville. This was later absorbed by the Liberty Bank, and subsequently by the Bank of Italy, in 1930 becoming a member of the Bank of America branch system.

An effort to further the development of the Contra Costa valleys occurred with the construction, beginning in 1909, of the Oakland, Antioch, and Eastern Railroad, connecting San Francisco with Sacramento. Danville was reached by the electric line in 1914, reducing the distance from San Francisco from 56 to 32 miles, and cutting the scheduled time in half. Little suburban development within the San Ramon Valley occurred following this event, however, and with the advent of automobile and truck competition the San Ramon Valley line was abandoned.

In 1909 the population of Danville was estimated to be 400 and growth was slow, increasing by but 200 persons in the next 30 years. In 1910 the San Ramon Valley Union High School District was formed, consolidating five smaller districts. This high school, located in Danville, serves the Alamo, Danville, Green Valley, San Ramon, and Sycamore districts.

Following the opening of the Broadway Low Level Tunnel in 1937 greatly improved vehicular transportation was afforded between the interior valleys of Contra Costa County and the cities of Oakland and San Francisco (via the Bay Bridge, opened in 1936). Great suburban development of the inner areas occurred following this event. San Ramon Valley, however, was not affected to the same extent until the conclusion of the second world war. The tremendous influx of population into the Bay Area, together with the building up of the Lafayette, Walnut Creek and Concord areas, has led to the recent opening up of the orchard lands of the San Ramon Valley.

The great increase in population of the Danville area during recent years caused a corresponding increase in community activities. The first newspaper published in Danville was started in 1944 as a weekly known as the Valley Pioneer.

Increased school enrollment required a large building program beginning in 1948. A primary school, Charlotte Wood School, was constructed south of the business district, and additional units for the Danville elementary school and the high school were built on the existing grounds north of the business section. The construction of a community swimming pool in conjunction with the high school was authorized by the electorate of the district in 1950.

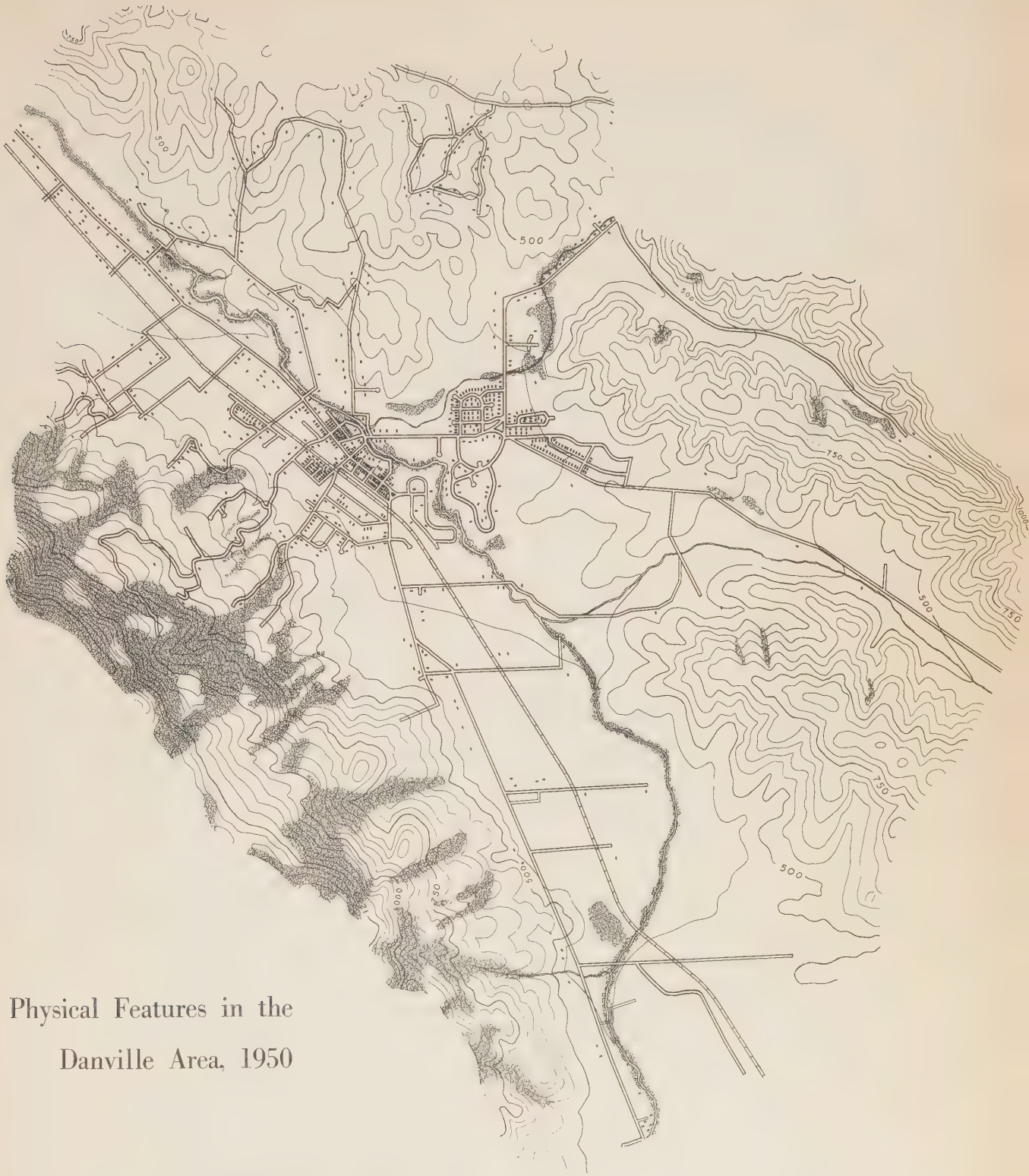
The status of Danville as a town center serving a surrounding agricultural region is in the process of change. Danville is becoming a community of suburban dwellers, seeking the quiet semi-rural atmosphere of the San Ramon Valley. The area (shown on the plate following this page) which includes Danville is estimated to have a population of approximately 2400 in 1950.

Natural Features

The town of Danville, in the San Ramon Valley, is located in the south central part of Contra Costa County, approximately fifteen air miles from Oakland and six miles south of Walnut Creek. It is characterized by a flat semi-rural setting of ranch-type houses amidst walnut trees, and is immediately hemmed in on all sides by steep rolling hills partially covered with oak and brush. To the west are the Contra Costa Hills which separate the valley from the central part of San Francisco Bay. To the east is the Mount Diablo range dominated by Mount Diablo itself, which reaches an elevation of 3849 feet, or 3500 feel above the valley floor.

Near the center of the town, San Ramon Creek, bordered with trees and shrubs, is joined by a tributary stream from Green Valley. The eroded banks of this tributary are quite unsightly. Excessive run-off from the surrounding hills during the exceptionally rainy seasons creates critical flood conditions in parts of the valley.

The climate of the San Ramon Valley is generally associated with that of the San Francisco Bay Region. The mean July temperature varies from 60° in San Francisco



Physical Features in the Danville Area, 1950

HIGHWAY & ROADS

STRUCTURES

RAILROAD

STREAMS

TREE MASSES

SOURCE: STUDENT SURVEY

to 70° in Walnut Creek, the nearest weather station to Danville. January temperatures vary from 49° to 46°, respectively.[2] San Francisco, with an annual precipitation of approximately 25 inches, has a greater rainrall than Walnut Creek, which has an annual precipitation of about 20 inches.[3] The prevailing winds come from the west, being modified by the topography. Danville is sheltered to a large degree by the surrounding hills.

The soils in the Danville area are principally clay and clay loams, ideally suited for many types of agriculture, though they are slow in absorbing moisture and difficult to plow. The principal fruit crops grown in these soils are pears, peaches, plums, prunes, cherries, quinces, grapes and figs. Nut crops include almonds and walnuts, while scattered fields of grains and grasses are found throughout the foothills.

Community Organization

The People

The population of Danville can be divided roughly into two main categories: 1) the pioneer families; and 2) the newcomers. The large farms and ranches of the valley are, in general, owned and operated by the pioneer families, and this group has constituted the major opposition to the intensive development which has recently taken place.

The newcomers consist in general of two types: 1) aged and retired people; and 2) white-collar workers, employed in the metropolitan centers. Both of these groups live in the more intensely developed areas about the center of town and in the recently built subdivisions. Many aged and blind persons reside in Danville,[4] old age pensioners being more numerous in this vicinity than in other parts of the county. As many of the latter live with their children there are numerous households spanning three generations.

The typical Danville family is numerically smaller than that found in other sections of similar social composition within the county. It has been estimated at approximately 3.4 persons per family.[5]

A few families live on or near the Mount Diablo Country Club estate. In general they support the ranchers in

resisting any further intensive development within the area.

The use of migrant farm labor in the Danville area has been decreasing since the conclusion of the second world war. Instead, former war-workers are transported from the Richmond-San Pablo area during the fruit and walnut picking seasons.

The groups opposed to further intensive development have shown considerable strength. An attempt to join Danville to the adjacent Walnut Creek sewage district was defeated by a two-to-one vote. Developers have found it difficult to obtain land fronting upon the state highway north and south of town because of the determination of the owners to help retain the rural atmosphere of the community.

Formal Organization

It has been estimated that nearly 90 per cent of the residents of Danville belong to at least one of the more than twenty-five civic, church, fraternal, and other organizations (see list at end of this section). Memberships range in size from a few persons to more than 100 in some instances. The pioneer group, having primarily agricultural interests, strongly supports the Danville Grange, dating from 1873, as well as the Farm Bureau Federation. It was also responsible for establishing some of the older fraternal organizations, such as the I. O. O. F. and the Rebekahs.

The newcomers tend to belong to such organizations as the Lion's Club, the Chamber of Commerce, and the P. T. A. The two major community groups each contribute members to all the organizations, although certain of these appear to be dominated by either the pioneers or the newcomers.

Two elements serving to unify the community are the Community Presbyterian Church and St. Isadore's Catholic Church. Both have active Sunday schools and youth and adult groups. The former, established seventy-five years ago and representing the only Protestant denomination in town, plays a large part in binding the community together. Other organizations tending to have the same effect are the Boy and Girl Scouts, and the Parent Teachers Associations.

Civic groups are of more recent origin and have had varied success in achieving their objectives. The Youth

Center Committee which conducts recreation classes for adults and children succeeded in having a $108,000 bond issue passed in 1950 for the construction of a swimming pool and three additional classrooms at the high school. The Lion's Club, with a membership of forty-three, is active in providing uniforms for the Junior Traffic Patrol, conducting toy drives, high school oratory contests, and Fourth of July barbecues. The newly organized Business and Professional Women's Club will probably also become a community service club.

The basic division existing between the newcomers and the pioneers was illustrated during the recent campaign resulting in the rejection by the electorate of a proposed sanitary district. The proposal was fought by the Walnut Growers League, formed by the pioneer group with the aid of many young veterans who felt that they could not afford the higher taxes that would result. The newcomers advocated the establishment of a sewer district, feeling that the lack of such facilities would retard the development of the area as well as serving as a possible menace to community health.

Numerous tract improvement clubs exist throughout the town. Although small in size they are quite important in the community. Found within most of the newer subdivisions they are influential in enforcing set-backs, building codes, and other types of informal property controls.

The following is a list of the majority of organizations within the community:

Fraternal Organizations

Danville Grange
I. O. O. F. Lodge, No. 378
Rebekah Lodge, No. 234
Neighbors of Woodcraft
Mount Diablo Post, American Legion, No. 246
American Legion Auxilliary
Farm Bureau
Masons
I. D. E. S. (Men's Portuguese lodge)
S. P. R. S. I. (Women's Portuguese lodge)

Civic Organizations

Chamber of Commerce
Lion's Club
Danville Women's Club

Business and Professional Women's Club
Youth Center Committee

Church Organizations

Community Presbyterian Church
St. Isadore's Catholic Church

General Organizations

P. T. A. -- San Ramon Valley Union High School
P. T. A. -- Danville Elementary School District
Boy Scouts of America
Girl Scouts of America
Diablo Art Association
Women's Republican Club
Tract Improvement Clubs
Walnut Growers League

Community Services

County Government

Danville, an unincorporated community, is situated approximately thirteen miles south of Martinez, the county seat. The primary services rendered by the county in the Danville area are: 1) public health nursing; 2) fire protection; 3) social welfare services; 4) police protection; 5) county road maintenance; and 6) a branch library service.

Although relatively isolated Danville has a well equipped county fire station. The fire chief has one full time fireman and thirty volunteers. The equipment includes five trucks ranging in water capacity from 175 gallons to 1000 gallons. Two of the smaller trucks are equipped with two-way radios.[6] The members of the organization are efficient and well trained. This fact has been instrumental in reducing the fire insurance rates.

County public health nurses visit the Danville area twice a week. Although the San Ramon Valley contains approximately 1/50th of the county's population the nurses spend one hour out of every sixteen in that area. This may be due to the long traveling distances plus a high percentage of old age illnesses.

Local police protection is becoming a problem in Dan-

ville. The sheriff's office has but one deputy inspector assigned to an area which covers one-third of the unincorporated territory of the county. Some recent theft cases have been delayed in their investigation because of a lack of sufficient personnel assigned to the district.

County roads are fairly well maintained. Most complaints are acted upon promptly.

The county planning commission has established a general zoning plan to cover the Danville area. No future plans or further zoning revisions are contemplated at present.

Schools

The Danville Elementary School District operates two schools, one north of the business district adjacent to the high school, and the other south of the central district. The San Ramon Valley Union High School District, comprising five elementary school districts--Alamo, Danville, Green Valley, San Ramon, and Sycamore, maintains its high school in Danville.

There is some coordination between the activities of the high school and each of the elementary schools. The high school has adjusted its transportation system to provide service to both Danville and San Ramon. It furnishes music instruction for Alamo and Danville, while the latter is also provided with shop instruction and cafeteria service.[7]

Both school districts have experienced rapid increases in enrollment during the past four years. The following shows average daily attendance figures for both regular day and adult night classes.

	Average Daily Attendance*	
	Regular Day	Adult
1947-48	140.57	6.88
1948-49	158.05	11.74
1949-50	183.53	14.88
Nov. 1950	221.00	not given

* 525 hours of attendance equals one A. D. A.

According to present estimates there will be 340 students enrolled within the next year, with from 400-500 in the next four or five years. The increase will necessitate an additional bond issue in another two years, additional buildings being constructed on the twenty-acre site owned by the high school.

The Danville Elementary School District has a present enrollment (November 1950) of some 490 pupils. Doubling up occurs up to the third or fourth grades but this condition will be alleviated through new construction permitted by a bond issue recently passed.

The high school district has a basic tax rate of $0.78 per $100 assessed valuation, which is at present at its legal maximum. To increase these rates a special election is required. Thus, for 1950-51, the building fund required an additional $0.228 per $100 assessed valuation. Based on present assessments, an additional $0.10 would be required to pay for the $108,000 bond issue recently passed.

A youth center operates with the cooperation of the high school, and the swimming pool to be constructed will serve the community as well as the school population.

Utilities

Utilities required by the residents of the Danville area are supplied by private companies. Numerous problems concerning the cost and extension of utilities have arisen coincident with the rapid expansion of the community. In general, rates charged users in the area are considered high.

Gas is supplied by the Coast Counties Gas and Electric Company, while electricity is provided by the Pacific Gas and Electric Company. Water, furnished by the California Water Service Company, is considered one of the more serious problems. The system is characterized by a lack of pressure, and the rates charged are quite high. The company plans, however, to construct a larger main which will increase pressure. At present, a single-family home with a small garden and lawn will often have a water bill of from $16 to $20 per month.[8]

Telephone service in the Danville area has recently been improved by the placing of Diablo on the Danville exchange. The former toll charges required for intercommunity calls has thus been eliminated. The local

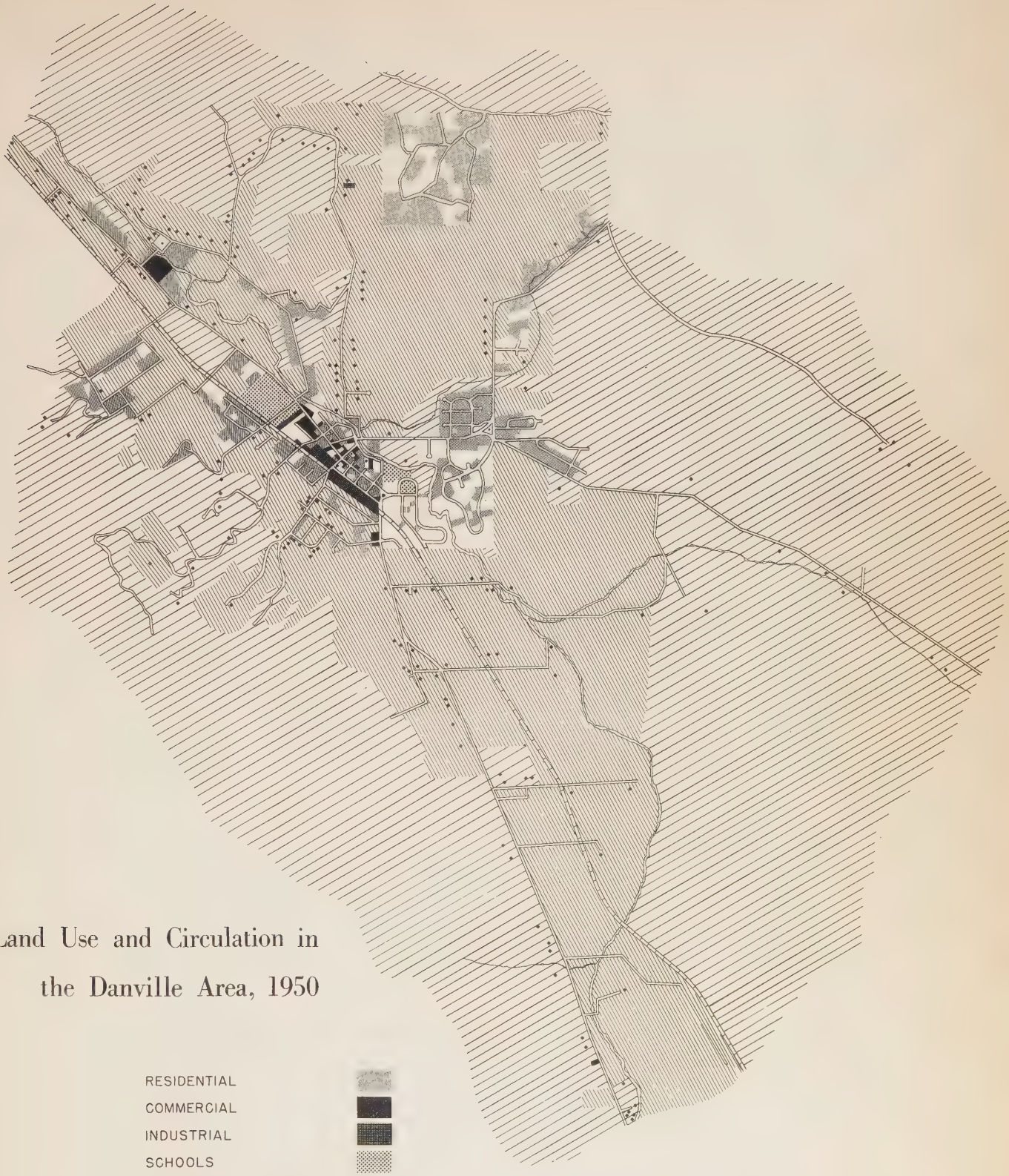
equipment, of the handringing type, is in need of modernization.

Waste disposal and drainage present important problems for Danville. At present, certain sections of the area have poor drainage, but the installation of proper facilities could alleviate this condition. Waste disposal, however, presents a more serious problem. Septic tanks are used throughout the community as the means of sewage disposal. Although this method is acceptable in rural communities of low density, the increasing urbanization now taking place, together with the prevailing clay soil, makes the continuing use of septic tanks dangerous to health, and will act to prevent the commercial, industrial, and residential development of the community.

Land Use

The most extensive type of land use in Danville is agricultural. (See plate following page 50) The southern and western portions of the area are devoted primarily to fruit orchards, grapes, tomatoes, and forage crops. Other portions serve as extensive grazing lands. A small compact commercial center is located around the intersection of the state highway and Prospect Avenue. In the surrounding eight blocks residences and businesses are intermixed, together with the post office, the Veterans Memorial Building, and the firehouse. The two churches are also in this area, and on the western fringe near the Southern Pacific tracks there are a few industries. Public uses consist of two elementary schools, a high school, a cemetery, and a small park. Some commercial uses are found outside the central cluster along the highway but there are no neighborhood shopping facilities. Most of the commercial and public buildings are in good condition and they range in age from new to thirty-five years old. The industrial buildings are in fair condition but would have a blighting effect on the entire community if allowed to deteriorate.

The residences can be placed in three categories: new, middle-aged, and old. The last group contains primarily single-family homes (only three duplexes were found), two stories high, and in fair to good condition. They are concentrated mainly around the town center. The newer homes are found in the scattered subdivisions. The most fully developed of these are on the flat land south and east of the center. The lot sizes vary from



Land Use and Circulation in the Danville Area, 1950

RESIDENTIAL

COMMERCIAL

INDUSTRIAL

SCHOOLS

OTHER PUBLIC AND SEMI-PUBLIC USES

AGRICULTURAL

OPEN LAND

RESIDENCES ON AGRICULTURAL OR OPEN LAND

UNDEVELOPED LOTS

RAILROAD

SOURCE: STUDENT SURVEY

0 100 200 400 1000
SCALE IN FEET

7200 square feet to one-third of an acre, the latter selling for about $2000 with the home costing from $12,000 to $40,000. With low assessments predominating, many veterans are virtually removed from the tax roll via veterans exemptions. The middle-aged homes are found largely on the hills west of the highway and on the rolling valley lands.

Circulation

The Danville road pattern shows little sign of the familiar gridiron, since it was laid out for an agricultural community. The roads are predominantly one to two lanes wide with narrow or no shoulders. Except for some minor dirt roads in the western section they are paved with asphalt and are in fair to good condition.

The state highway is also two lanes wide with asphalt paving. The town's only paved sidewalks and gutters are found along the highway where it passes through the commercial center. In the center the highway turns twelve degrees providing visual interest and aiding in slowing down traffic. State Division of Highways traffic counts, taken in 1950, indicate that 10,000 vehicles pass through Danville on the state highway during a typical weekday.

Danville is served by five trucking lines that haul packaged food, uncrated and miscellaneous goods. The Southern Pacific Railroad has a spur track running through the center of town which handles an average of ten freight cars per month but provides no passenger service. Danville is a non-agency station, all the town's business being handled through the Walnut Creek office.

A local bus line, the Community Service Line, provides transportation between the town and Walnut Creek five times daily. In addition the Greyhound Bus Line has one scheduled round trip daily between Danville and Oakland. The bus leaves in the morning and returns in the evening and remains overnight.

Economic Activity

Danville's principal source of local income is from

agriculture, the main crops being walnuts, tomatoes, and pears. Livestock grazing is also considered important. Fruit pickers commute from the Richmond area during harvest time, thereby eliminating any migrant labor problem. Most of the farms are of moderate size, quite old, and unmortgaged.

The town has limited industry. The Danville Warehouse and Lumber Company, the largest plant, employs fifteen to twenty people. Other industries, while showing interest in Danville, have located elsewhere because of high land costs and the lack of sewerage facilities. It is, therefore, estimated by the Chamber of Commerce that sixty-five per cent of the working population commute to jobs in San Francisco and Oakland. A small number, however, are employed in the local commercial center. It is estimated by the Chamber of Commerce that this center serves about 6000 people in the town and the vicinity. The Bank of America reports increasing deposits and some twenty to thirty new accounts each month.

THE ECONOMIC FEASIBILITY OF A NEW CITY AT DANVILLE

Introduction

There are no set rules for planning the economic base of a new city. In general, three basic and interrelated factors of a social and economic nature must be considered simultaneously in the determination of a viable economic base for a new city at Danville. The first two of these, (1) the economic potential of the town site itself, and (2) the economy of the Bay Area, form the existing conditions and starting point for (3) the planned development of this potential, integrated with a general plan for the Bay Area in the future.

The above factors, in turn, should be examined in the light of "what is being planned for", that is, the social policy which ultimately guides the economic development. A statement of this social policy--which appears to be in agreement with the social and economic objectives previously noted--is offered by E. M. Hoover as the "basic aims of locational policy":

> "Nearly everyone favors the full and continuous use of production factors, good all-round living and working conditions, individual economic security, variety of individual economic opportunity, national solidarity, security and power, and rapid economic progress".[9]

The writer continues that "we cannot head full speed for all these goals at the same time" and that compromise is necessary, concluding that "differences in the evaluation of specific locational policies mean that communities and nations attach different priority to the indicated aims".[10]

Dependent on the relative importance of the various objectives planned for, no single factor relevant to the establishment and continued existence of a new town could be called decisive. Social policy, for example, may override normally impossible site and economic conditions in dictating the location of a new town for strategic reasons. Under less pressing circumstances, it might be thought desirable in terms of economic efficiency and social amenity to either revivify or remove a community from an area with a declining or depleted economic base. This latter alternative is often present in the consideration of new towns in Great Britain.

Fortunately, no such compelling extremes exist in the case of planning a new city at Danville, and while there are certain limiting factors both as to the particular site and the economy of the Bay Area generally, there still remains a fairly wide range of alternative proposals as to the detailed components of the economic base. Such flexibility is desirable, and indeed necessary, for the planning of a new town within the context of a future--and as yet, non-existent--plan for the Bay Area.

Although there is at present no over-all general plan for the Bay Area as an economic and social region, it is still possible to make general assumptions as to the role of the new city at Danville as a part of this future plan. This is true because a realistically planned orientation of this new city within the larger Area must be guided by the same basic planning considerations which will guide the formulation of the larger plan, and in so doing, the essential nature and trends of the Bay Area economy must be recognized.

For the purpose at hand, the "economic base" of Danville is broken down into two parts, namely: the "basic" economy and the "local" economy. The basic category deals with those economic activities geared to a larger "outside" market, while the local term refers to those economic activities predominately serving the local population. (In both cases, the activities include both public and private operations.) An example of the former activity might be that of a branch plant manufacturing or processing parts or a finished product for assembly or sale outside the town itself, while the neighborhood grocer would be an example of the latter. In many instances, a precise division between these activities cannot be maintained and extensive overlapping occurs, e.g., a large department store serving a trading area larger than the town itself.

In proposing an economic base for Danville, no attempt has been made to indicate the operational intensity of the various economic activities. Also no precise analysis as to income levels and classes has been made. On these points, it has been assumed that a relatively high level of employment will be maintained and that, in general, the levels and distribution of income characteristic of the Bay Area, will also prevail in Danville.

The Economic Potential of The Site

As pointed out previously there are no outstanding physical assets of this site which historically would have attracted significant industrial and commercial development. The absence of such attractions as local resources, access to water navigation or power, the proximity to trade routes, etc., has obviously inhibited this type of development.

A small area of fairly fertile soil was the only obvious economic base, but the exploitative limits of this resource were quickly reached. Even though Danville did lie athwart an early communications route of some importance (the San Ramon Valley), subsequent urban development in the Bay Area minimized this potential and the surrounding terrain has served, even up to the present time, as a barrier to the ever widening urban sprawl of the East Bay. It is quite probable that in the course of "normal" urban development, Danville would never become a thriving center of economic activity, although it could become a relatively isolated wing in the East Bay suburban dormitory. Certain features of the site would also tend to encourage the latter development, namely; an attractive natural setting, and an agreeable climate.

The drawbacks which historically have inhibited economic development of the site in the course of "normal" growth, are by no means decisive deficiencies today. When the site is re-appraised in terms of recent trends in technology and business practices, in general, and in view of a "planned" rather than a "normal" development of the Bay Area, in particular, even former disadvantages can be turned into positive assets.

The barrier of rugged terrain, for example, which isola-

ted the site from the East Bay, has at the same time preserved a choice living area unencumbered with contiguous urban sprawl. With the use of modern transit, the former isolation can be easily obviated. Thus a geographically discrete but relatively near and potentially easily accessible site is available today which lends itself readily to development as a new city. There remains the problem of locating sufficient economic activity at Danville to justify such development as desirable to the social and economic future of the Bay Area.

The location of economic activity in a modern industrial society is becoming more and more characterized by mobility and flexibility. The traditional patterns of industrial location no longer hold for many industries as the factors of production become more mobile and transfer costs become a more important element in the cost of production. There is a noticable trend in the manufacture and assembly of consumer goods, for example, to locate closer to population centers. At the same time more flexibility in the components of a given separate operation has become possible, with the result that a smaller output in many instances can be produced just as efficiently as a larger output from a larger aggregation of the same components. This is particularly true of certain assembly operations of a single small product where the increase in size of a separate plant is only the result of multiplying identical operations. Technological flexibility, in general, has also given rise to the dispersal of industrial operations in a given area both between and among industries.

Along with the increase in mobility and flexibility in modern technology there has been an equally important and concommitant increase in consolidation and closer integration of industrial processes. This trend, though, has taken place, primarily, in the more basic industries and those industrial processes more firmly rooted to a natural resource. The full realization of the economies of chemical technology, for example, demands that the entire range of by-products from the basic resource be considered as the result of an integrated continuous process. Such integration has already occurred to a remarkable degree, e.g., in the case of the resources of oil and coal. But even in such cases the decisive factor of efficiency is the <u>continuous</u> operation of the process and with a sufficient reduction in transfer costs certain of the stages of the operation can be carried on some distance apart.

In general, theories of industrial location recognize three major categories of industries in regard to their locational characteristics, namely: (1) Resource-oriented industries; (2) Market-oriented industries; and (3) Footloose industries. With certain limitations --centering chiefly around basic resources--the flexibility of modern technology has resulted in increased emphasis toward the latter two categories, and as technology advances, even the resource limitations are becoming less decisive in view of the ever-widening range of alternative resources.

The net result of this increased locational flexibility in respect to the planning of an economic base for a new city, is that a given social policy can have its objectives realized in a more flexible manner. In effect, a broader base is made available for balancing one set of goals against another.

There are thus no really significant technical barriers to solving the problem of locating sufficient economic activity at Danville in order to justify the site as the location for a new city. The real problem now becomes one of selecting, from a fairly wide range of alternatives, just those economic activities that best integrate the new city into the total economy of the Bay Area. From the foregoing it would appear (in the absence of sufficient natural resources) that the industrial economic potential of the site lies in its adaptability to the development of certain market-oriented and footloose industries.[11] The site itself can furnish an excellent living environment for a sizable working population close to the core of economic activity in the Bay Area. This close proximity suggests the practical utilization of the site for industrial operations ancillary to this central economic activity. In addition other industrial activities, complementary to the total economy of the Area, could be developed.

Aside from this manufacturing potential, the site can be practically utilized for the location of other types of essential economic activity of a service industry nature. A closer approximation of the specific types of industrial and service activities for the site requires an examination of the total economy of the Bay Area, in general, and in particular, an appraisal of the role and status of those sectors of the economy concerning the above activities.

The Economic Integration of Danville into The Bay Area

General

No comprehensive economic survey has been made of the Bay Area economy since the War. According to the Bay Area Council[12] "the only basic study of the economy of the whole Bay Area published to date was made in 1941". This study[13] was developed largely from data in the United States Census of Manufacturers, 1939, and the Population Census of 1940. Even though the analysis and conclusions of this study are somewhat out of date, they still possess significant value in that subsequent (though less comprehensive) surveys reveal that the expanded postwar economy of the Bay Area still has the same general pattern of 1940.

In general, the principal natural resources of the Bay Area are "the large, sheltered, deepwater harbor, the Bay and Ocean fishing grounds, the agricultural resources and climate".[14] Various minerals in limited quantities are found within the area but no major industries have been based on them. Water is available from both local and distant sources. Hydroelectric power, natural gas and petroleum from elsewhere in the state are the principal forms of power and fuel. Well developed transportation services, railroads, shipping lines, truck and bus routes, domestic and transocean airlines radiate from the Area.

"The economy of the Area, like that of other metropolitan regions, is built largely on its economic relationships with the hinterland and with outlying territories and foreign countries".[15] The economy is also highly diversified, and no single industry or group of closely related industries employ such a large fraction of workers as to dominate the economy. Table I of Appendix E shows the prewar pattern of these economic activities and Table II shows the increase in these activities by industry groups through April, 1947.

Holding to the previous assumptions as to the types of activities best suited for the future economic base of Danville, the analysis of this pattern and its trends is best confined to the categories of "manufacturing" and "service" industries, the service category in this instance including both public and private activities.

Manufacturing

Table I of Appendix E shows that manufacturing absorbed about 22 per cent of the workers in the total prewar economy of the San Francisco Bay Area. This proportion was about 2 per cent less than that for the nation. Table II further indicates that manufacturing employment in the Area increased 50 per cent by 1947 but this increase was only equal to the comparable national rate while in California the statewide increase was 75 per cent and for the Los Angeles District the increase in the same activity was 98 per cent.[16] That even a 50 per cent expansion in manufacturing activity is not really sufficient for the Bay Area is indicated by the observation of the Bay Area Council that

> "of all the aspects of economic growth in the Bay Area, industrial development has received the most public attention. This can be justified by its potential rather than its actual expansion to date... Notwithstanding the progress already in sight, there appears to be plenty of opportunity for further expansion of manufacturing in the Bay Area. Such expansion is necessary to insure employment for the increasing labor force, and to balance the growth of other kinds of economic activity. Industrial development calls for more sustained effort than some other phases of economic growth seem to need." [17] (italics ours)

A more qualitative judgement as to the specific types of activities that might be logically given a priority in this called-for expansion, can be made by the study of Appendix F which lists the various industries as to their degree of Area "development". Although these data from the 1937 Census of Manufacturers might be obsolete in many respects, the repeated observations that the basic pattern is retained in the postwar economy should be remembered. Table V of Appendix F indicates for the years 1947, 1948, the postwar industrial expansion.

It was estimated before the war that well over two-thirds of the manufacturing in the Area was done for local or regional markets,[18] and only a small percentage (12 per cent) of manufacturing was located in the Area because of local raw materials. Roughly 15 per cent were "residentiary" or market-oriented industries. About three-quarters (73 per cent) of the industrial wage earners in the Area were employed in "footloose" industries.[19] This latter fact is of extreme importance and supports to no small degree the assumptions regarding an economic base for Danville.

Of equal significance to Danville, in terms of developing the site as a decentralized component in the economy of the Bay Area, is the fact that the need for the dispersal of industrial activity has already been felt and the trend in this direction firmly established. "One of the marked changes in Bay Area manufacturing is the decentralization which has accompanied suburban growth and the rise of satellite cities on the outskirts of San Francisco and Oakland." 20/ Appendix G clearly details this trend, away from the central core, in terms of the shift in proportions of wage earners and value added. The planned encouragement of this trend is fundamental to the realization of its real values, i.e., if the historically accompanying impediment of contiguous urban sprawl is to be eliminated.

Public Services and Service Industries

Unlike manufacturing, the trend in the growth of public and other service activities has tended, for the most part, toward central location. In recent years, this trend has been accellerated with the phenomenal increase in government employment. As indicated in Table II of Appendix E, the greatest percentage increase in employment in the postwar Bay Area was in government workers (186 per cent). The number of civilian employees in governmental agencies (predominantly Federal) rose in the San Francisco-Oakland District from 26,000 in 1940 to about 74,000 in 1947. "The Bay Area probably now stands second or third in number of Federal civilian employees, exceeded only by the District of Columbia and possibly Baltimore or New York."21/

An indication of what this increased Federal employment means in economic activity may be gleaned from the following data:22/

The Federal civilian payroll in the Area totaled approximately $208 million in 1947 and during the same year the Veterans' Administration in the Area had expenditures of about $200 million. Federal purchase contracts for the fiscal year ending June 30, 1947, were about $215 million (this was for the entire state but included only those contracts over $10,000). Today Federal hospitals in the Bay Area have a total of over ten thousand beds and construction had been authorized as early as 1948 to increase this total by 3,000 by 1951. In seven Bay Area counties, the capital value of permanent Federal facilities is $304 million, while in eight coun-

ties the government owns 72,650 acres of land and leases 2,200 additional acres. As noted previously, the site at Danville is a highly suitable location for certain of these activities.

The largest of all the industry groups in the Bay Area (service industries) had an employment increase of 41 per cent in the period 1940-1947. This was a larger increase than 29 per cent for the nation and 34 per cent in the Los Angeles District. The Bay Area has long been noted for the number and size of its service establishments, particularly of a financial nature. Banks, investment houses, insurance, real estate, etc. serve not only the Bay Area but larger areas.[23] Most of these activities, by their very nature, seem to demand a centralized location but even here there are significant possibilities for more efficient decentralized operations.

Of particular relevance to Danville in this connection is the example of the insurance industry. Already, the New York Metropolitan Area has witnessed a certain dispersal of operations in this industry, and this example could be profitably emulated in the Bay Area. At the present time there are 468 insurance companies whose California headquarters are in the Bay Area[24]--the majority being located in San Francisco itself.

In general, the trend of service activities in the economy of the Bay Area may be further noted by examining the distribution of employment by occupational classes shown in Table III of Appendix E. "This shift to higher paying occupations is another reflection of the predominantly service economy of the Bay Area."[25]

Summary

As previously noted, there are no technical barriers to hinder the development of an economic base for Danville. Accepting this and the assumptions that certain "footloose" and service industries should logically be located at the site, the foregoing brief examination of the Area economy has revealed that:

1) "Footloose" industries already characterize the pattern of manufacturing activity and that there is a significant degree of "underdevelopment" of specific activities as well as the need for over all expansion. Furthermore, the trend toward decentralization is firmly established. But the

lack of planning has brought sprawl with dispersal.

2) Service industries and activities (both public and private) are in ample abundance but with a tendency toward centralization. While there are certainly no strong arguments for indiscriminate or per se centralization, further study will be necessary to detail the decentralization. A significant exception is the insurance industry where dispersal has already occurred elsewhere. Also there are many practical arguments that could be put forward for the dispersal of many government service activities.

From this investigation it would follow that a planned development of significant economic activity at Danville is not only feasible, but highly desirable. The general and specific recommendations for this planned economic development are the subject of the concluding part of this Section.

Recommendations

General

In 1941 the California State Planning Board made twenty-one recommendations for the economy of the Bay Area.[26] In the opinion of this Board, the implementation of these proposals would not only facilitate the postwar adjustment of the economy but would also tend toward a more stable and balanced economic development of the Area. Some of these recommendations were also more directly related to the defense program at that time. By and large, the more long range proposals at that time still lack significant implementation and for that reason can well be re-stated today.

In line with the broader objectives of a satellite economic base at Danville and the general requirements of an economic plan for the Bay Area, the following of these recommendations are particularly pertinent:

1) While manufacturing and other activities in the Bay Area are highly diversified, many smaller communities are still one-industry towns. These, as a rule, are in growing industrial areas. The diversification of industry is desirable and should be encouraged.

2) Many of the underdeveloped industries in the Area have a high degree of cyclical or seasonal instability, e.g., mechanical industries, heavy industry, textiles, clothing. Some permanent expansion of such industries may be justified despite the resulting tendency to increase the instability of the economy.

3) To facilitate the absorption of skilled and semi-skilled workers in the postwar period and the permanent utilization of light metals produced on the West Coast, consideration should be given to the development of various mechanical industries and their desirability should be considered in the award of future war contracts.

4) As local consumption expands for patented and branded products made elsewhere, the producers would be justified in establishing branch factories in the Area. These possibilities should be explored, for this is one of the most persistent and important trends of recent decades in the industrial expansion of the Area and the state.

5) Special research should be encouraged to discover new products and ways of further processing California products for regional, national and international markets. Such discoveries for the petroleum industry, chemicals, food processing, lumber products, and agricultural products generally would greatly assist the Area and the state in making the readjustment to come. Meanwhile, the feasibility of local production of recently discovered products in these lines should be considered.

6) To restore maximum economic stability to the economy of the Bay Area, special efforts should be made to maintain the previous heavy emphasis on non-durable and consumers' goods.

7) To integrate the larger established cities of the Area with the present and future industrial growth on their periphery, there is urgent need for inter-community cooperation to develop the Bay Area as a unified economic region.

8) San Francisco, Oakland, and Richmond, as ports, should encourage the development of adequate

trucking highways and other transport facilities from their wharves to the growing industrial suburbs south of San Francisco, and south and north of Oakland.

9) The larger cities should, in anticipation of further suburban growth, organize and develop their retailing, wholesaling, warehousing, shipping, financial, service and recreational facilities to serve the periphery effectively as well as the center.

10) Industrial development committees of public officials and business men could render important service by coordinating their separate efforts, and by cooperatively promoting those policies which would improve the economic balance and efficiency of the region as a whole.

In addition to these general recommendations, certain specific recommendations for the site itself have been made.

Specific

In the weighing and balancing of the various physical factors of the site against the desired social goals for the new town, a population of 30,000 has been decided as a desirable upper limit. Assuming an average family size of 3.6 persons and the average number of gainfully employed workers at 1.7 per family, the resulting labor force for whom jobs must be provided would be around 14,500. A planned for objective is that only about one-fifth of this labor force will be gainfully employed outside the new town, thereby reducing the number of local workers to approximately 11,600.[27]

It has been further assumed that the aforementioned "local" economy will occupy approximately ten per cent of the entire labor force or roughly 1,500 workers. The disposition of this labor force as well as the elements of the "local" economy, along with approximate area requirements, is set forth in Schedule 1. of Appendix H.

The remaining 10,000 workers constitute the labor force for the "basic" economy and Schedule 2. of the same Appendix is offered as an example of what this economy

might be. At this juncture, it should be recalled that the development of the new town is to take place within the context of an over all plan for the Bay Area. As this latter plan is worked out in detail, in turn, greater precision and refinement will be forthcoming regarding the elements in the economy of this new town adjunct of the broader plan. It is only with this qualification that a proposed schedule of these elements is offered. A detailing of the time stages for developing these scheduled elements is, of course, beyond the scope of this report, and indeed would be presumptuous at this stage of the problem.

The total area requirements for the "basic" economic base of Danville has been calculated as roughly ten per cent[28] of the town area, excluding the greenbelt. As varying amounts of this activity could be located in the greenbelt itself, this proportion allocated to industrial land use would appear to be ample.

A PLAN FOR A NEW CITY

Objectives and Principles

Introduction

The plan for a new city at Danville which culminates this report is intentionally general in nature, and is in no way offered as a definitive site plan, or as a blueprint for construction. The purpose of this study has been to set down those principles and objectives which would most logically guide the planning of a new city, and to suggest how these principles may be applied to an actual and appropriate site.

The phases of more detailed planning which would follow should intimately involve and have the collaboration of the appropriate government officials, local residents, community groups and interests. It has been said that "a growing town is a living entity and its final shape in detail cannot be exactly predicted or prescribed."[29] The planning process must therefore be a continuing one.

Among the points which have been established thus far in the report regarding the desirability and feasibility of planning and constructing a new city at Danville are the following:

1) The population of the San Francisco Bay metropolitan region will continue to expand in the forseeable future.

2) The trend toward urban decentralization in the

Bay Area will also continue.

3) The continuance of present patterns of urban expansion and decentralization will serve to compound the present problems of congestion, sprawl, and disorganization, further reducing the advantages of urban living.

4) The channeling of part of the future increase in population into new cities (independently situated communities of limited size), within the framework of a regional plan, can best insure the evolution of a more desirable and efficient total urban environment in tne Bay Area.

5) The small community of Danville in Contra Costa County possesses advantages of site and location which make it ideally suited to become one of the recommended new cities in the Area.

6) It would be economically feasible to establish a new city at Danville from the standpoint of obtaining an adequate economic base.

The points summarized above serve as the general assumptions upon which the planning process was based. In developing the plan for a new city at Danville certain basic planning objectives and principles have served as guides.

The principles have, in many respects, dictated the kind of solution arrived at, with the site itself imposing certain restrictions and suggesting certain design elements. The plan (see plate following page 75), then, is a broad statement of the principles and objectives followed in its preparation. However, a great amount of detailed research would be necessary to carry the plan beyond its present generalized scope, and this further study into the economic, engineering, financial, and design problems involved might and most probably would cause the present plan to be considerably modified.

It is on this basis that the solution is offered, in the hope that it will stimulate criticism and interest in the evolving of methods of land planning for a new city and, where applicable, for existing cities.

Objectives

The general planning objectives which have guided the thinking during the planning phase of this problem can be summarized as follows:

1) An environment that will put each individual within easier reach of his goals and that will help make possible a decent life for families of all social, ethnic, and economic groups.

2) Facilities for groups of individuals having common environmental needs.

3) Improvement and better integration of residential, commercial, industrial, recreational, and cultural facilities to meet the changing needs of individuals as they pass from infancy to old age.

4) A maximum locational stability of population by providing for a wide range of occupational, living, social, and cultural needs within the community.

5) Equal opportunity for all economic, ethnic, and social groups to utilize such facilities as schools, recreational areas, cultural centers, etc.

6) A wide variety of living accomodations in residential areas so that there will be a maximum choice for all individuals and families to live in the types of dwellings and neighborhoods they deem most desirable without segregation by social, ethnic, or economic group.

Principles of Land Use and Circulation

The major principles which have guided land use and circulation planning for the new city at Danville are the following:

A. Land Use Principles

1. General

a. Access to sunlight, air and to the countryside should be provided residents of the new city.

b. The size and population of residential areas should be limited on the basis of grammer and high school service areas.

c. Integration (and separation where desirable) of residential, commercial, industrial, and community areas is necessary.

d. Living and non-living areas, i.e., all sections of the community, should be aesthetically satisfying.

2. Specific

a. A permanent greenbelt must be maintained surrounding the built-up portion of the city.

b. Residential areas should be as close and convenient as possible to working, shopping, and recreational areas.

c. The indiscriminate mixture of uses should be prevented.

d. Objectionable industries should be segregated or eliminated.

e. Natural amenities or areas of historical interest should be preserved.

f. Complementary types of commercial and industrial activity should be grouped.

g. Industrial and commercial areas should be located close to transportation and utilities.

h. Community facilities should be conveniently accessible and of adequate size, with space reserved for expansion.

i. The location of community centers should be guided by factors of functional and aesthetic significance.

j. The greenbelt should be developed to its maximum agricultural and recreational use.

k. Recreational facilities should be aesthetically pleasing and should meet the needs of all age groups.

B. Circulation and Transportation Principles

1. General

a. Convenient, safe, and attractive transportation and circulation should be provided to and from the center of the new city, related to the type and intensity of land use as well as to topography.

b. Rapid mass transit should be provided to the inner and outer metropolitan centers.

2. Specific

a. Loading and unloading facilities should be integrated with the circulation pattern to provide for the efficient and safe movement of people and goods.

b. A minimum amount of traffic should be permitted in the central district.

c. An adequate system of public transportation should be provided within the new city.

The principles enumerated above are closely related to one another. Two illustrations of this type of relationship are described here.

1) The need for providing accessibility to sunlight, air, and to the countryside is partly supplied by the maintenance of a permanent peripheral greenbelt, containing primarily agricultural and recreational uses.

2) Although residential areas should be located as close and convenient as possible to the working, shopping, and recreational areas of the community the indiscriminate mixing of land uses is to be avoided. The proper integration of residential, commercial, industrial, and community areas will provide a physical environment suitable to meet the needs of the city's residents,

Social and Economic Principles

The population should be heterogeneous in its social and economic composition. The benefits derived by a

community due to a heterogeneous social structure are passed on to all of its inhabitants. In the words of a British group exploring the feasibility of new city development, "a contribution is needed from every type and class of person; the community will be poorer if all are not there, able and willing to make (it)..."[30]

In order to meet the needs of a heterogeneous population residential areas must include a variety of dwelling types.

Desirable industries must be encouraged to locate in the new city to aid in providing an adequate economic base. The furnishing of a variety of types of employment is instrumental in securing social heterogeneity, while the locating of many different types of concerns will aid in lending stability to the community.

The size and type of commercial areas should be in proportion to the size and complexion of the community, i.e., sufficient to allow competition but not over-development.

The size and type of recreational facilities should be determined by the social character of the population. All elements must be considered when designing recreational areas, either within the urbanized area or the greenbelt.

The existing community on the new city site must not be disregarded. The existing social and physical environment should be integrated into that of the new city wherever possible. Local citizen cooperation is greatly to be desired and should be fostered to alleviate friction between the new city development agency and the local residents. Developing a new city upon the nucleus of an existing community allows for the use and extension of existing facilities, and the recognition and use of local tradition and character in the planning process.

The actual development of a new city can be accomplished by either private or public means. The formation of a private corporation to acquire an entire site and to plan and construct the new city would be possible under present laws. Early British examples of Letchworth and Welwyn both indicate the feasibility of this method of new city development.

However, in the event of disinclination on the part of private capital to enter this field, local publicly fi-

nanced development corporations would be feasible and desirable agencies to undertake new city development. Under the urban redevelopment provisions of the National Housing Act of 1949 it would be possible to construct new cities similar to the one described in this report. Appropriate state enabling legislation, however, is needed for the implementation of this provision.

Although the legislative and administrative procedures necessary for the planning and construction of a new city have not been worked out in detail in this report the following describe the essential considerations.

1) State enabling legislation is required to permit the creation of a local public development agency and to define its powers.

2) A regional planning agency is required with the responsibility of developing a regional master plan into which the plan for the new city can be integrated.

3) Authority is required at the regional level to prevent undesirable suburban expansion of the urban centers, and to permit the establishment of new cities according to a regional plan of development. The integration of regional plans should take place at the state level.

4) The new city should be incorporated.

5) Cooperation is required between the development agency and the existing governmental bodies.

6) The development agency should be dissolved upon completion of the construction of the new city and its activities transferred to the local government.

7) It is mandatory that the plan for the new city be periodically reviewed by the appropriate planning agency to ensure proper development.

The General Plan for Danville

Planning Procedures

The plan for a new city at Danville, based upon the planning principles described in the preceding section, was evolved by following the series of procedural steps outlined below. Although worked out primarily for this particular problem it serves also as a general procedural outline for attacking similar problems involving the planning of new cities.

1) Decide upon a tentative ultimate total population based upon criteria for an optimum sized city, and then determine an approximate required city area based upon this tentative population and an estimated over all density.

2) At the designated site, lay out the town and greenbelt areas based upon topography, suitability of the greenbelt area, maximum distance from the periphery to the center of the city, etc.

3) a. Ascertain the amount of land to be reserved for industrial, commercial and community facilities (based upon the tentative population). Locate the town center areas (major commercial and public facilities) and the industrial areas on the site.

   b. Locate the major highway, the major railroad, and the major transit route on the site.

4) Designate the living areas; refine the designation of the agricultural belt. Locate any community facilities which were not included in the central area (under step 3).

5) a. Determine the number of neighborhood units feasible with this population based on school and community facility standards. Locate the neighborhood units on the site.

   b. Locate the major trafficways related to the neighborhood, industrial, and commercial pattern.

   c. Calculate total population based on neighborhood densities, using standards, and check

against tentative population.

6) Determine the areas required for neighborhood facilities: schools, recreation, commercial areas, etc., in each of the neighborhoods. Locate these facilities on the site.

7) Allocate the population in the neighborhoods with regard to low, medium, and high density areas:

Medium and high density	- adjacent to commercial centers, closest to transit and major trafficways, and permanent open space.
Low density	- closest to schools, family facilities.

8) Calculate total population.

The Size of the New City

In the planning of a new city it is necessary to arrive at an ultimate desired population in order to properly allocate space required by the various land uses. The ultimate optimum population for the new city of Danville has been established at approximately 30,000. In arriving at this determination certain factors have been considered which dictate maximum and minimum limits of size. Important factors determining the maximum limits include these:

1) Dwellings should be within a reasonable walking or traveling distance of community facilities, including the schools, the shopping and industrial centers, and the recreational areas.

2) People should have the opportunity for easy and relatively direct contact with the countryside. A peripheral open space combining agricultural and recreational uses provides this opportunity and serves to define the limits of the new city.

3) The apathy and lack of civic unity found in some very large cities and in urban agglomerations can be largely prevented by limiting the size of cities. Medium-size cities can more easily pro-

vide opportunities for participation in civic and group activities.

4) The physical features of the site can act to delimit the site. As Danville is located in a rather narrow valley expansion of the community beyond a set size would result in an undesirable string-like development. The disadvantages inherent in such a situation would require that urban expansion be limited at a certain optimum size.

Factors influencing the determination of a minimum size for a new city include these:

1) The new city must be large enough to support a variety of economic activities. Besides aiding to secure a sound financial position for the community this will also insure a variability in types of occupation.

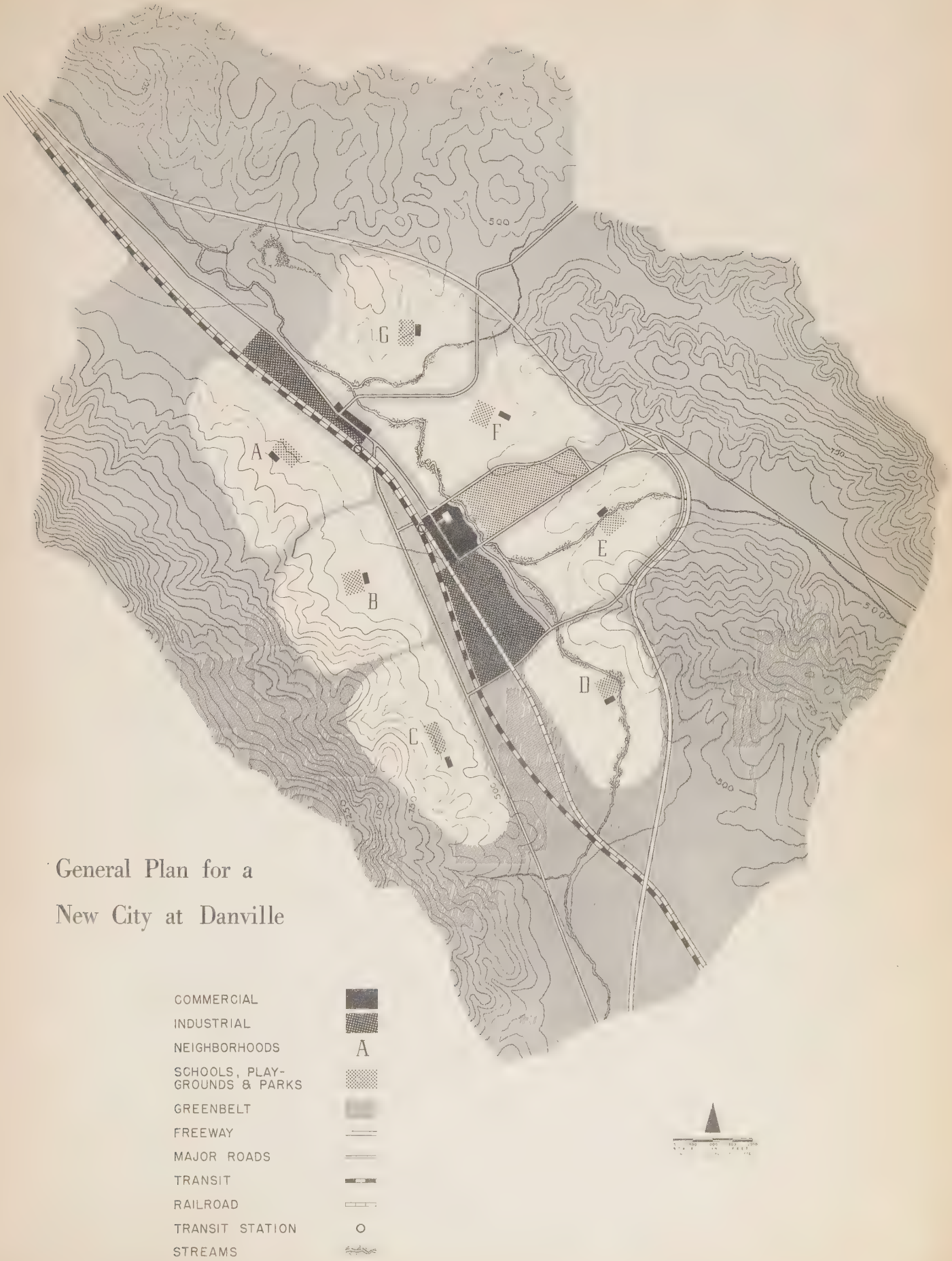
2) The city must be large enough to economically support desired or required commercial, educational, and cultural facilities.

3) The city must be of sufficient size to allow for the development of a socially heterogeneous population. In addition, a diverse industrial and commercial structure of a size commensurate to that of the city is required.

An analysis of these factors with respect to Danville, and relying heavily upon British experience, has led to the determination that the optimum population for the new city should be approximately 30,000. In allocating land uses based upon this ultimate population an additional ten per cent has been included to provide a measure of flexibility.

Living Areas

The living areas of Danville are divided into seven neighborhoods. Within each of these are located the residences and those facilities, such as elementary schools and neighborhood shopping areas, which are necessary for the convenience and well-being of the residents of the neighborhood. In size the neighborhood corresponds to that of an elementary school service area. Its population should be sufficiently large to support



General Plan for a New City at Danville

the facilities provided within the neighborhood. It should not be of such a size as to make walking distances for school children and shoppers unreasonable. It is important that major traffic arterials do not pass through the neighborhoods, but that they serve to bound and delimit neighborhoods. Other possible separators are parks, large playgrounds, and commercial and industrial areas.

The seven neighborhoods planned for Danville include in area all of the present town and a large tract of undeveloped land to the south. They comprise, altogether, an area of approximately 1750 acres, including that taken up by elementary schools and neighborhood shopping facilities.

As the basis for determining the residential population a density of 5.5 families per acre, or twenty persons per acre, has been used (see Appendix C). Each neighborhood, it is proposed, will have a population varying from 4000 to 4500 persons, or from 1110 to 1250 families; in other words, a population sufficiently large to support an elementary school of first through eighth grades, with two classrooms per grade.

The total land area for a typical neighborhood of 4500 persons is approximately 250 acres; or 227 acres increased by ten per cent to provide for changes within the neighborhood and the possible expansion of certain facilities. Each neighborhood includes diversified types of living accomodations and lot sizes, an elementary school, nursery and kindergarten schools, neighborhood shopping facilities, parks, paths and playgrounds. These facilities, where possible, are located at a distance of no more than one-third of a mile from each residence.

The types of dwellings and the number of families to be accomodated are as follows:

Single family detached on a lot 60' x 100'	625 families
Single family detached on a lot 80' x 100'	313 families
Single family semi-detached	100 families
Two family detached	84 families
Ten-unit garden apartments, two-story	84 families
Multi-family apartments	44 families
Total	1250 families

For a breakdown of the proportion of land in the neighborhood to be devoted to each use see Appendix C.

The plate on the following page indicates the manner in which the neighborhood designated as "D" on the general plan for the new city might be developed in accordance with the principles previously established as desirable. The chart accompanying the plan shows the distribution of land uses within the neighborhood. The school, church, shopping area, and other major neighborhood facilities are located near the center in order to be readily accessible to all the inhabitants. The numerous small parks located throughout the neighborhood are designed primarily as play areas for smaller children. Many of these small parks are connected by an interior system of footpaths which supplements the street system and provides ready pedestrian egress from the living areas to the peripheral greenbelt. The creek and the land immediately contiguous to it are considered unusable for residential purposes and are allowed to remain in a semi-natural state.

Neighborhoods A, B, and C (see plate following page 75) occupy the area west of the present railway and highway. Of these, Neighborhood A is the farthest north and contains the western part of the existing town. It was thought feasible to include a part of the steeper hillsides to the west of the valley floor in this neighborhood so that some houses might enjoy the view from these slopes. This has necessitated making these neighborhoods somewhat larger than the average because of the decreased amount of usable land available in the hillside areas. Lots on steep sites necessarily require more area in order to provide comparable amenities.

Neighborhoods F and G contain the remaining part of the present town and can be developed without materially affecting the existing homesites. Neighborhoods D and E, lying south of these and east of the highway and railroad, are at present largely undeveloped.

The present main shopping center of Danville is incorporated into a proposed secondary commercial center serving Neighborhoods A, F, and G. Each of these are also served by their own smaller neighborhood shopping areas. Some of the businesses now located in the present shopping center will probably wish to relocate in the new town center (see below).

In locating the neighborhoods an attempt has been made to include some natural features of the landscape in each, in most cases a stream or a wood-crested hillside.

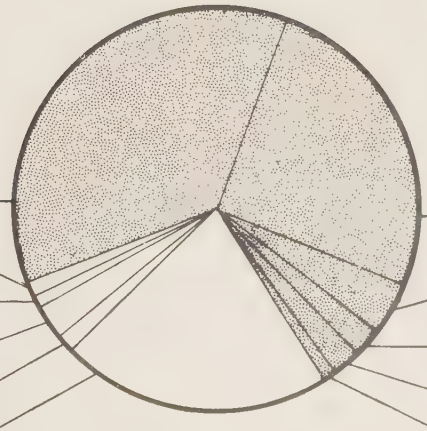
The location and size of each neighborhood was determined,

Proposed Plan for Neighborhood "D"

0 100 200 300 400
SCALE IN FEET

RESIDENTIAL

COMMERCIAL



PERCENTAGE DISTRIBUTION
OF AREA BY TYPE OF LAND USE

in large part, by these regulatory features: 1) density standards; 2) the distance from each part of the neighborhood to the school and the shopping facilities; and 3) the distance of the neighborhoods from each other, and from the town center and manufacturing areas. To some extent, however, the placing of the neighborhoods dictated the location of the commercial, industrial, and community areas. The unusually large size of Neighborhood F, which is situated on relatively flat land was partly determined by the existing pattern of growth in this particular area, and because the existing thoroughfares and natural boundaries seemed to militate against any smaller division of the area.

The present elementary school, located in Neighborhood F, will most likely assume some auxilliary community function, due to its awkward location with respect to the major roads and the commercial center. The present high school is also too inappropriately located to be continued in its present function in the new city. Occupying a peripheral position it is located in the narrow end of the valley, sandwiched between the railroad and the major road.

Neighborhood shopping areas cover an area of approximately 2.7 acres each, including the provision of two square feet of parking space for every square foot of floor area. As many as two small shopping areas may be located within a neighborhood, but each must be planned as a separate unit, rather than permitting an indiscriminate mixture of residential and commercial uses.

Homesites within the neighborhoods provide room for the expression of individual tastes in dwelling types and sizes. Architectural regimentation is not one of the aims of this plan, though certain standards need to be applied.

The Business and Community Center

The business and community center of the new city at Danville is located in an area comprising approximately thirty acres near the center of the community. While no precise plan has been prepared for this area, it may be visualized as an urban shopping and business center serving not only the 30,000 residents of the city, but also the population immediately adjacent in the San Ramon Valley.

The center's community facilities, auditorium, churches, library; its entertainment facilities, cinemas, clubs and sports arena; its offices; its retail stores and department store, provide part of the economic base for the community, employing approximately 1300 people. Possessing adequate parking facilities the center combines attractive and conveniently arranged shopping areas with the community governmental center and the adjacent high school with its playing fields, track, and swimming facilities. The central location of the area places it not more than from a mile to a mile and a half from the most remote part of the new city.

The center is bordered by the inter-neighborhood arterials and the rail and interurban lines, and is not divided by any major road. Its major approaches are from the north, south and east. On the east the San Ramon creek separates the town center from the extensive (30 acres) high school site. A breakdown of commercial and community facilities is presented in Appendix H.

Industrial Areas

The industrial area proposed for the new city at Danville is divided into two principal sections (see plate following page 75). The larger of these is located in the southern part of the city adjacent to the town center and to Neighborhoods B, C, and D. The northern industrial area occupies a site adjoining Neighborhoods A and G, as well as the secondary commercial center south of the present high school site.

The separation of the industrial area facilitates and shortens as much as possible the journey to work without, however, jeopardizing the living areas. The more concentrated and large scale industries, it is assumed, will be located in the southern industrial area, where they will be separated from the adjacent living areas by copious open space, and where smoke and odors, if any, will not be carried by the prevailing winds in a direction towards the townsite.

Both of the industrial areas are served by the existing railroad with the provision made for spur tracks on either side of the main line to serve individual industries. Non-rail shipping is handled on the perimeter of the industrial area by truck roads serving the same plants. The interurban transit line does not use the railroad roadbed through the southern industrial area,

but skirts it, thereby avoiding conflict between high-speed transit and freight handling services.

The area allotted to industrial uses, approximately 140 acres, is meant to provide space for the major portion of those industries mentioned under schedule "2" in Appendix H, forming the "basic" economy for the new city, and employing a labor force of approximately 10,000 workers. Certain appropriate industrial uses can be located in the greenbelt. The most important of these, the sewage disposal plant, can be best located in the northern end of the valley.

Transportation and Circulation

In order to alleviate traffic congestion and increase safety within the town center a new freeway carrying through traffic skirts the new city on the east. The present route of the state highway within the city has been relocated in the area between the existing town center and the proposed town center, and serves as the main north-south road for the community. The use of this street by through traffic is to be discouraged. The new freeway regains the route of the state highway south of the city and traverses the San Ramon valley to enter Alameda county. At a point south and east of Neighborhood E an interchange structure provides access to a major road following, roughly, the existing Tassajara road to Livermore and the Central Valley.

The major east-west road within the townsite joins the north-south road south and west of the town center, and joins the freeway on the east at the northeast corner of Neighborhood E. This street provides the only access to the freeway between the points on the north and south where the freeway leaves the route of the existing state highway. Traffic entering the new city is thus limited to three points of entry, north, south and east.

The majority of existing roads within the present townsite are preserved. The road providing access to Green Valley on the east of the town passes under, but does not provide access to, the freeway. New roads skirt or separate the neighborhoods, connecting these with the town center, as indicated on the plan (see plate following page 75). The amount of space within each neighborhood dedicated to roads approximates twenty to twenty-five percent of the total area (see Appencix C).

The existing railroad is not substantially relocated, but its roadbed is widened to 100 feet or more where necessary to accomodate the double tracks of the high-speed, interurban transit system. On this route, two stops are proposed within the new city site, one near the secondary commercial center, and the other at the town center. At both, a station and parking facilities are located for the convenience of patrons.

The Greenbelt and Open Areas

The greenbelt which surrounds the new city includes the major ridges east and west of the town, and, on the valley floor north and south of the city, areas sufficient to create definite breaks between the new city and existing or possible future development in the vicinity. To include an area of this size on the north, however, it is necessary to include land now containing residential development. Over a period of time these developed areas will be re-absorbed into the greenbelt as either agricultural or recreational uses. In all, the greenbelt includes some 12,872 acres which will remain relatively undisturbed as regards development and will be easily accessible from the neighborhoods by means of paths, trails, and a minimum of roads.

The major part of the valley floor included in the greenbelt will remain in agricultural use. Other facilities to be furnished in the greenbelt include a golf course, a boy scout day camp, picnic and playing grounds, hiking and riding trails, a cemetery, and a sewage disposal plant. In addition, space is available to meet other appropriate needs of the local economy. A site at the mouth of Sycamore Valley has tentatively been selected for locating a medical or health center with appropriate hospitals and clinics which will serve as part of the economic base of the community.

Within the city itself several large areas adjacent to the town center and the manufacturing or industrial center are set aside as open areas. These provide level recreational ground close to the living areas, and serve as a means of separating certain uses. The open areas also provide space for those inevitable changes that occur in any community over a period of time. These "transition zones" might be needed also for office facilities of some special sort, an insurance firm for example, or for some government service structure, which could be accomodated without any serious detriment to the city.

Summary

The principal features of the plan for a new city at Danville can be summarized as follows:

1) The living areas consist of seven neighborhood units, each with its own convenient and accessible elementary school and shopping center, and each located close to the community working, shopping, and government areas, as well as to the greenbelt.

2) Each of the neighborhoods provides living space for from 4000 to 4500 people, with the ultimate population for the new city expected to be approximately 30,000. The proposed neighborhood density is twenty persons per acre.

3) The town center, consisting of an urban shopping and business and community center, serves the residents of the new city as well as the immediately adjacent population in the San Ramon Valley.

4) Working areas in the new city of Danville include a) the town business center, employing about 1300 people; b) two industrial areas, employing approximately 10,000 persons; and c) appropriate types of utilities, institutions, and industries found in the greenbelt.

5) The vehicular and pedestrian circulation pattern proposed for the new city includes a) a freeway skirting the community carrying through traffic and providing access to the city at three points; b) a number of major roads connecting the living areas with community working and shopping areas, and serving to separate neighborhood units; c) minor residential access streets located within the neighborhoods and specifically designed to exclude through traffic of any kind; d) a system of footpaths for pedestrian traffic between living areas and schools, shopping areas, and greenbelt.

6) Danville is served by a high-speed interurban transit line connecting it with the metropolitan centers. Local transit service is also provided.

7) A greenbelt serves to delimit the urbanized area of the new city, and provides space for primarily

agricultural and recreational uses, although certain appropriate institutional, service, and industrial uses can also be located there. Access to the greenbelt is by footpaths and a minimum of roads.

The allotment of space to the various land uses is summarized as follows:

		Area (in acres)
Neighborhoods (total)		1758
Usable residential areas (includes neighborhood streets)	1579	
Neighborhood shopping areas	19	
Neighborhood schools, parks, playgrounds	80	
Unusuable residential land	80	
Business and Community Centers		39
Principal new city center	31	
Secondary business center	8	
High school, central park		73
High school site	30	
Central park	43	
Industrial Areas (not including industrial uses in greenbelt)		140
Major Transportation Facilities (includes all rights of way)		308
Total Urbanized Area		2318
Greenbelt Area		12872
Total New City Area		15190

IMPLICATIONS OF THE NEW CITY

Living Habits

Living Habits in Relation to Planning

The complex pattern of our day to day activities, in each cycle of day and night, acts upon and is directly affected by the circumstances or environment in which we find ourselves. This pattern of twenty-four hours of activity varies slightly, perhaps, over a period as long as a single generation, but the sum of variations from generation to generation may be immense; immense in the sense that a minute change, a subtle weighting of activities in one direction or the other may require a major adjustment of our nervous or digestive or even our social systems.

Our working, playing, sleeping, eating, traveling, and other allied habits cover a large number of different activities which, in the course of any individual's lifetime, vary in degree of participation and interest. Thus from school attending, we turn at some point to wage earning or housekeeping and meal preparing. One generation will eat more and travel less, one age group will take less interest in active sports and more interest in creative endeavours, in hobbies or in following the arts.

These quite obvious readjustments which we all make are further influenced by the social and physical background in which we find ourselves, and it is imperative that the planner take special cognizance of these potential

shifts in activity that physical and social readjustments bring about. On the other hand, the individual's adjustment to a particular social or physical arrangement must always remain a matter for conjecture, and the prevailing habits are the only criteria that the planner may depend upon for guidance in his work. In this respect, the planner proposes but the members of society dispose according to their goals, ambitions, and long ingrained patterns of behaviour. It is certainly not the planner's function to assess the individual's habits in a critical sense, but rather, to study these habits, goals and patterns of behaviour, and, in intimate collaboration with the society in which he belongs, to bring about those changes that will benefit this society on its own terms.

Leisure Habits and the Journey to Work

What then does the New City mean as regards our prevailing living habits, in an intimate personal sense or in the broad social sense? For better or for worse, a greater amount of leisure time seems assured those taking advantage of working opportunities provided within the community. With a significantly shortened journey to work and with commuting possible but not necessary, community and neighborhood activities will receive greater emphasis. The degree of participation in sports, hobbies and cultural pursuits would be, it is hoped, very high by virtue of the convenient proximity of activity centers to living areas.

It perhaps should be pointed out that a temporary shortage of cultural and service activities may prevail in the initial stages of building the community. However, such early displacement will probably be minimized by a general early interest in setting up and readjusting to a new home and social milieu.

Working

The variety of available jobs in the New City will most likely be not so great as in the metropolitan center, but there is reason to believe that in a community of limited population size the stability of the labor market will be enhanced. This, however, will preclude any in-migration when jobs and accomodations are no longer available. This, in turn, suggests that controls over

inhabitants, at least as regards their numbers, will be severer than elsewhere. However, this will only be true when the community reaches its maximum capacity - at which time it might be found feasible to begin a new site, depending on the success of the pioneer venture.

Race and Income Segregation

Since there is a tendency everywhere for groups to segregate themselves by income groups, the provision for areas within the neighborhoods that will accomodate different income levels will result in at least a kind of heterogeneity which would not prevail with a neighborhood to neighborhood segregation.

As regards racial segregation, the policy would be clearly non-discriminatory should any public development authority be concerned. With an expected preponderance of white families, a ratio of from fifteen to thirty-five per cent of families of other racial groups will keep either group from feeling insecure or threatened (based on experience here and in the East) and yet maintain a measure of homogeneity. Here too, segregation within the neighborhood may be expected. Undue concentration of racial groups is undesirable, however, and would suggest that the over all neighborhood ratios were not being maintained. The degree of segregation within the neighborhood will eventually be minimized by the common use of neighborhood recreational facilities.

What has happened in the past regarding segregation is not too satisfying a criteria for what may happen in the future and under the circumstances proposed. In the past, segregation has been more or less deliberate on the builder's and dweller's part. This is true of both income and racial segregation. Builders and subdividers have made a point of building for some single segment of the market, usually the high and upper middle income groups, and then, in the interests of protecting the investment, imposing restrictive covenants on the area under private control. We do have an occaisional example of a shift of attitude in control resulting in a shift of attitude among dwellers, especially regarding racial attitudes. These examples should be a source of encouragement for further experiments, carefully administered, along these lines. Control is meant here in the most generally administrative and benevolent sense, for it is not envisioned that a New City should be subject to more than the normal amount of civic administration, once built and settled.

Summary

The basic question of the New City concept may be stated thus: does this concept contradict, in any way, the way of living we know, and our long ingrained habits of behaviour, either personal or social? As we have seen, none of the proposals for the New City requires anything that could be labeled as a broad social change, as far as living habits are concerned. Rather, these proposals seem to be extensions of already existing patterns, and include needed adjustments for trends that are already established. Provisions to facilitate the maximum use of increasing leisure hours and for reducing time spent in traveling to work and back; provisions for more convenient shopping; increased opportunities for participation in sports, cultural, and other activities could hardly be said to fly in the face of traditional American living habits. The easing of racial barriers is a goal that we in America are increasingly anxious to achieve, and is, as such, the dominant social problem of our time. The New City, where no tradition of segregation prevails, seems the obvious place to seek a proper adjustment and to make the most forward looking experiments towards solving this problem.

Economic Institutions

Controlled Growth Vs. Land Speculation

The economic principles of the New City have been discussed elsewhere in this report. The implications of the New City in the light of America's economic past, apart from those areas already covered, deal mainly with the two opposing methods for development of the land; for speculative reasons, or for specific social and material goals, other than private profit. The New City presents no real problem in this regard since it is proposed for development by a single authority. But out of this proposed type of development, a principle arises that will undoubtedly be contested, and on grounds that are directly linked with our prevailing methods of speculative land development. It will be contested because the principle has force and meaning, and, if generally adopted, would seriously change this prevailing system of land development.

Thus, it is in the light of its general application that the restriction on the extent of the use of the land and the density of its development takes its place as the most controversial aspect of the New City concept. This is, in fact, an abridgement of the right to use property belonging to one as one sees fit (presuming a continuance of the private ownership of the land). However, the right to make whatever use one wishes to make of a piece of property or of the land is already considerably modified where there are zoning laws in enforcement, and further steps in this direction can conceivably be justified under the same police power regulations that made zoning laws feasible.

The elimination of uncontrolled speculation in real estate is a long step towards assuring the proper use of the land, if we assume that in most cases of uncontrolled use of the land there has been no attention paid to the needs of the community or of all the people. Indeed, if the land had been properly used, that is, used with the best interests of the community in mind, many of the problems that the planner is asked to find solutions for would not have resulted. But it is unlikely that, with no restrictions on the use of the land, the best interests of the community can be served.

Whether the economic good of a community is synonymous with the economic good of any one group, the real estate group or the business man group, is a matter that cannot be answered decisively. However, in a new town it would seem that from the outset this decision should be made, and in favor of the community as a whole, for many specific adjustments must be made in deciding the amounts of area to be allocated for different uses and how these areas are to be integrated into the whole community. The decision and responsibility will be the planners'. Thus it is of utmost importance that the planner or planners who organize a new town in America realize to what extent they are working out of context, as regards the American past, and to what extent they can justify what they do in terms of the past. The organization of a new town implies strong restrictions and strong allocative powers, for, if a new town can be planned, to that measure also can its economy be planned; and must be, if the town is not going to be just another residential suburb.

The New City and the Metropolitan Area

The planner perhaps also realizes that one does not plan for a metropolitan area on a piecemeal basis, and that in preparing a plan for a new town, he is assuming the background of area-wide planning, even though he cannot assume that there will be any such planning until after the new town may have been realized. Thus, the new town may serve as a model for later, similar projects, or as a point of departure, but always as part of a whole and not as an unrelated entity. This is especially important in regard to urban redevelopment projects whose major aim is to reduce urban congestion. Here, the organization of new towns must be carefully co-ordinated with the work done in the metropolitan center to assure that urban redevelopment does not result in even more aggravated congestion as people are displaced.

The New City as a Testing Ground

The planner cannot presume that his viewpoint is automatically that of the majority, or that the majority will agree, in every case, with his methods. Therefore, a new town, which must of necessity be largely a solution reached by agreement among planners, may serve as a testing ground for all the untried machinery of urban planning. Unlike an established urban center where planning measures can only be trotted out at the behest of a higher authority - and large scale, planned changes are accomplished only at a staggering cost and at the considerable inconvenience of the inhabitants - the new city offers an area of control in which the planners' solution will stand or fall on its own merits, and certain politico-economic problems can be minimized. In other words, the new town offers the planner and the dweller the opportunity to test new theories without colliding headlong with a status quo which, whether good or bad, usually proves to be a considerable barrier to large scale, physical planning.

One of the underlying tenets of planning is, as we have seen, the stabilization of land values. Some urban economists would say that this is an impossible task, and point out the deterioration of the urban center as a result of changing tastes and living habits. The planner has a quick and easy answer to this, but the pudding has yet to be made, and has yet to be tasted, at least in this country.

Industrial Development

The success of the new town concept will depend in large part on the ability of the developer or the developing agency to attract a diverse industrial development to the site. It is understood that the new town will provide a relatively stable economic base, sufficient to employ a majority of its inhabitants, rather than serving simply as a dormitory for people working elsewhere. With the provision of industrial sites, controls will be needed to protect the residential areas from the harmful affects of obnoxious industries. This can be accomplished by either adapting, excluding, or isolating the industry. Towards this end, lease arrangements might include a requirement for nuisance abatement techniques.

Control of Surrounding Areas

As a profitable investment opportunity for a development corporation, the new town will require judicious planning restrictions in its surrounding area. An agricultural belt surrounding the town, using such restrictions, will be protected from encroaching development, and cultivation can be maintained at a higher degree than in the case of land that is ripe for speculative growth. Control of the land will entail, for best results, that the development agency construct factories, shops, and multi-family dwellings itself, leasing them for long terms.

Need for Government Loans

The establishment of a new city will require an initial capital outlay of considerable proportions for land acquisition and for the construction of the above mentioned buildings. Under the urban redevelopment provisions of the National Housing Act of 1949, loans are available for this type of development. The compulsory sale of land under eminent domain will in all probability be invoked for the purposes of initial land acquisition.

Conclusion

The concept of the new city, as described in this report, is worthy of study because it points the way toward a new form of urban development divested of many of the deficiencies characteristic of present forms of urban structure. This concept, if implemented by positive action, can do much to improve urban living conditions, and in so doing can help bring into greater harmony the heretofore divergent aims of American society. The new city provides a good physical environment for all its inhabitants, and at the same time furnishes opportunities for the full development of individual expression.

The new city appears to be a logical extension of the general pattern of American living. Although eliminating certain physical and social deficiencies of the unplanned urban environment it does not present a radical departure from that pattern. New and more varied opportunities are provided the individual citizen, enabling him to develop to the full his potentialities within the framework of a democratic society.

APPENDICES

APPENDIX A

PROBLEM STATEMENT

October 30, 1950

C. P. 213, Fall 1950
10 week problem

Subject: Preparation of Plan for Controlled Expansion of One Community of Limited Size in Contra Costa County and of a Technical Report on the Plan and Related Matters

To : All Members of C. P. 213 Class

Introduction: The sections of the metropolitan Bay Area which lie in the outer urban area, such as the western and central portions of Contra Costa County, are being rapidly developed. It is known that there is no metropolitan-wide plan or planning activity to guide the efforts of the nine county planning commissions in which the different parts of the suburban ring lie. It is also known that as yet not one of the county planning commissions has been able to prepare and adopt a long range, comprehensive, general plan showing for its area 1) where and to what size its suburban communities should be encouraged to develop, 2) how they should be planned and built in order to conform to the general plan, and 3) what should be done to make possible the limitation of the size of these communities and the retention of open areas between communities for agricultural, recreational, aesthetic, and other purposes.

Statement of Problem: Your assignment, which is your final assignment for the semester, calls for the preparation of a long range, comprehensive, general plan for the controlled expansion to a limited size of one existing community in Contra Costa County and of a technical report on the plan and related matters as specified below.

Assumptions: You will make the following assumptions:

A. That you will do the work as a student group,

and not as a hypothetical staff group in some existing local planning office. In this respect this assignment differs from most of the previous work you have done. In effect, your hands have been freed for the purpose of enabling you to use your imagination in a way that has not been possible in earlier assignments.

B. That you must prepare a complete technical report, suitable for reproduction in quantity, that will describe the planning process as well as the plan itself, and the assumptions on which the plan is based. The report will not be concerned with a program for effectuating the plan.

C. That the planning principles expressed in the 1944 Greater London Plan and the 1950 AIP Urban Growth Policy Statement can, with some modifications, be reasonably applied to the metropolitan Bay Area.

D. That the planning principles expressed in the English New Town plans also can, with some modifications, be reasonably applied to the Contra Costa community you select for development.

Work to be Completed: In completing the assignment, you are to perform the four specific tasks described below.

1. Interpretation of Existing Trends and Statement of Objectives of American Society. Illustrate the conflict between the objectives of a rising level of living as expressed in terms of physical living and working conditions and the continued essentially uncontrolled and unplanned development of Contra Costa County that will result if there are no significant changes during the next twenty years in present public and private methods of urban development.

2. Suggested Regional Plan for Bay Area. Make all assumptions necessary to enable the preparation of suggested long range, comprehensive, general plan for the metropolitan Bay Area. The plan must be definite enough to make possible the determination of the general character - social, economic, and physical - and specific site of a new community to be developed to a limited size in Contra Costa County which will incorporate within its boundaries an existing community.

3. Long Range, Comprehensive, General Plan for One Community in Contra Costa County. Select a site and prepare a plan as indicated above.

4. Statement of Implications of Proposed Community Plan in Terms of Legislation, Economic Institutions, and Living Habits. Describe changes that will be necessary, as indicated above, and show significant changes that have taken place during past forty years or so in line with the type of changes believed to be necessary before planned community development as proposed will be realized.

Organization: The instructor will be responsible for over all coordination throughout the ten-week period of the problem. Class members Finley and Murdoch will be co-chairmen of the major portion of the assignment - the preparation of the plan called for in paragraph 3. above. As the work develops new tasks will be assigned to other members of the class. The final due date is tentatively set for Monday of the last week of classes in January.

APPENDIX B

SOURCES OF PLATE MATERIAL

The San Francisco Bay Area

A section of an aerial sketch entitled "Airview of Nine San Francisco Bay Counties", prepared by the San Francisco Department of City Planning for the Bay Area Airport Planning Group, March, 1949.

Urban Pattern in the San Francisco Bay Area, 1948

Base map:
"Existing Airports Related to Surface Transportation in the Nine San Francisco Bay Counties", prepared by the San Francisco Department of City Planning, August, 1948.

Land use areas:
"Use of the Land Adjoining San Francisco Bay, 1948", Bay Area Airport Planning Group, July, 1949. Various U. S. Geodetic Survey and California State Division of Highways maps.

Regional Plan for the San Francisco Bay Area

Base map:
Same as preceding.

Land Use in Contra Costa County and the East Bay, 1950

Base map:
"Contra Costa County, California", prepared by the Contra Costa County Development Association, 1943.

Land use areas:
"Urban Pattern in Parts of Alameda and Contra Costa County, 1950", prepared by graduate student group, Department of City and Regional Planning, University of California, March 1950.

Physical Features in the Danville Area, 1950

Base map:
"Map of Lands from Walnut Creek and South through Danville", prepared by the Contra Costa County Title Company, November, 1949.

Physical features:
Various aerial photographs of the Danville Area.

Land Use and Circulation in the Danville Area, 1950

Base map:
Same as preceding.

General Plan for a New City at Danville

Base map:
Same as preceding.

APPENDIX C

NEIGHBORHOOD REQUIREMENTS

Neighborhood Density for the Proposed New Town

The term "neighborhood density", used in this report, is defined as "the number of persons, families, or dwellings per acre of neighborhood land area, including all land uses for neighborhood activities (residential land plus land used for streets, schools, recreation, shopping, and other neighborhood community uses), but excluding non-neighborhood land uses or unusable land within the neighborhood boundaries".[31]

Standards given in "Planning the Neighborhood" are used as a basis throughout this report, but adjustments have been applied to make them more applicable to the present problem. Other sources have also been referred to in this study,[32] but "Planning the Neighborhood" gives a thorough analysis of the subject with recommendations for standards to be used in the physical, social and economic aspects of neighborhood planning.

The determination of a suitable neighborhood density is based upon many factors, including: 1) the size and composition of families in relation to proposed types of employment throughout the proposed new town; 2) diversification of residential structures in relation to existing types in Danville, other similar communities in the U. S., and counties in the Bay Area; 3) efficient size and population of the area and use of land to provide all necessary community facilities within convenient walking distance of each resident.

Size and Composition of the Family

The establishment of 3.6 persons per family is based upon total urban population divided by total urban families,[33] but each family will vary from one person upwards according to social and economic conditions of living. Different types of industrial and commercial employment invite different family sizes, but it is expected that proposed types for this area will be sufficiently diversified to accomodate the demands of

varying family sizes. Together they are expected to maintain at least a 3.6 person average family size.

Types of Residential Structures

In view of the predominance of single family dwelling structures in Danville today, it is thought best that the majority of future dwelling units should be of this type. However, since many of the families will be of single persons, young couples without children, and retired individuals, a definite need is established for the two to four family house, the two story garden apartment type,[34] and the multiple family structure. The dwelling types and the per cent of families in each, shown in Figure 1, are based upon comparisons with similar areas elsewhere. Careful study has been given to provide ample yard spaces in order to maintain the low neighborhood density now existing in Danville.

Efficient Area, Size of Population and Land Use

A neighborhood of from 4000 to 5000 persons provides adequate space for diversification of residential types and central community services and facilities within a radius of approximately one third of a mile. This gives a flat area of 250 acres, which is adequate for such a neighborhood. Using the types of residential structures and their proportions given in Figure 1, we find ample room to house 4500 people (or 1250 families at 3.6 persons per family). This combination of land area and population produces a neighborhood density of 5.5 families per acre or 19.8 persons per acre.

A population of 4500 will efficiently support an eight grade grammar or elementary school of approximately 540 pupils. School facilities will be adequate to provide two classrooms for each grade, assuming thirty pupils per class.

Other facilities provided within the neighborhood include 5.6 acres of playground space to be combined with 2.5 acres devoted to school buildings. In addition, 0.4 acres may be used for play lots, each of at least 2000 square feet. In apportioning the amount of square feet per lot, larger lots should be provided in multiple family districts.

A park of 3.4 acres may be combined with playground facilities, but if intended for older persons it should be generally separated.

Shopping needs within the neighborhood are adequately

served by 2.7 acres of land. This includes parking space at a ratio of two square feet to one square foot of commercial floor space.

Most communities throughout the United States have at least twenty-five per cent of land area devoted to street purposes. This large proportion is due to the fact that blocks are short and cross streets are not more than 300-500 feet apart. With the elimination of short blocks, street area may be reduced to about twenty-two per cent with ample right-of-way widths of sixty feet. In the proposed neighborhood twenty-two per cent is equivalent to 49.5 acres. A sixty foot street provides adequate space for two lanes of traffic, two parking lanes, a sidewalk on each side and sufficient green strips.

In order to take care of future expansion of the neighborhood a ten per cent factor is added to a base of 227 acres. This will bring the total to about 250 acres.

Summary of Findings

The information presented in this report should be used as a guide and not as an inflexible rule. Variations within areas of ten per cent would not be unreasonable. The principal points to be considered are:

1) A neighborhood density of 5.5 families per acre or twenty persons per acre provides a satisfactory basis for residential population in the new town.

2) A neighborhood of 4500 people or 1250 families makes up the most efficient population to support an elementary school of one through eight grades with two classrooms per grade.

3) A total neighborhood area of 250 acres on flat land will provide sufficient space for diversification of residential structure types, centralized community services, and facilities within a radius of approximately one third of a mile.

FIGURE 1

LAND REQUIREMENTS FOR A NEIGHBORHOOD OF 4500 PERSONS DEVELOPED BY DIVERSIFIED BUILDING

Dwelling Type	Families %	Families No.	Residential ft²/family	Residential ft²/neighborhood	Streets ft²/family	Streets ft²/neighborhood	Parks ft²/family	Parks ft²/neighborhood
1 family detached 60x100'	50	625	6000	3,750,000	1800	1,125,000	115	71,875
1 family detached 80x100'	25	313	8000	2,504,000	2400	751,200	115	35,995
1 family semi-detached, 2 family detached	8	100	4000	400,000	1200	120,000	115	11,500
2 family semi-detached	7	84	2400	201,600	720	60,480	115	9,660
Row house 2-story, 10 unit garden apts	7	84	2400	201,600	720	60,480	115	9,660
Multi-family apts	3	44	1465	64,460	441	19,404	194	8,536
Total	100	1250		7,121,660		2,136,564		147,226
Area in acres				163.5		49.5		3.4
Area by per cent				72.0		21.8		1.5

FIGURE 1 (Continued)

Dwelling Type	Playgrounds		School		Shopping	
	ft^2/family	ft^2/neighborhood	ft^2/family	ft^2/neighborhood	ft^2/family	ft^2/neighborhood
1 family detached 60x100'	194		69		95	
1 family detached 80x100'	194		69		95	
1 family semi-detached, 2 family detached	194		69		95	
2 family semi-detached	194		69		95	
Row house 2-story, 10 unit garden apts	194		69		95	
Multi-family apts	194		69		95	
Total		242,500		86,250		118,750
	Play lots 18,750 @ 15 ft^2/family					
		261,250				
Area in acres		6.0		1.9		2.7
Area by per cent		2.7		.8		1.2

Total land area 227.0 acres per neighborhood (plus 10% = 250 acres)
Neighborhood Density 5.5 families per neighborhood acre
Neighborhood Density 19.8 persons per neighborhood acre @ 3.6 persons/family

Each resident within 0.336 miles of central neighborhood facilities.

APPENDIX E

INDUSTRIAL LOCATION FACTORS

The following is a selective abstraction of the U. S. Department of Commerce Publication Basic Industrial Location Factors: Guide for Evaluating an Area's Resources for Industrial Development.

June, 1947

"The basic location factors which, nation-wide, usually govern the evaluation of industrial plant locations, are:

I. LOCATION OF PRODUCTION MATERIALS
- A. What Production Materials Exist in your Area?
- B. In What Volume are the Production Materials Available?
- C. What is the Quality of Each Production Material?
- D. How accessible are the Available Materials?

II. LABOR
- A. What is the Labor Force of your Area?
- B. What is the Quality of the Available Labor Force?
- C. What is the Character of the Labor Force?
- D. Quantity of Labor Seasonally Available?

III. SITES
- A. How much Land is Available for Industrial Expansion?
- B. What are Soil and Topographic Features?
- C. What Facilities are Now or Will be Available?
- D. At What Cost and Terms can Land be Purchased or Leased?
- E. What Industrial Floor Space is or Will be Available?

IV. INDUSTRIAL FUEL
- A. What Industrial Fuel is Available for Additional Industry?
- B. How Dependable is the Supply?
- C. At What Cost is the Fuel Available?

V. TRANSPORTATION FACILITIES
- A. What Transportation Facilities are Available?
- B. What is Rate Situation?

VI. MARKET
- A. What is the Trading Area Generally Served from this Location?
- B. What is General Quality of this Market?

VII. DISTRIBUTION FACILITIES
- A. What Agencies and Services are Available?

VIII. POWER
- A. What Kind of Industrial Power is Available?
- B. How Dependable is the Power Supply?
- C. At What Cost is the Power Available?

IX. WATER
- A. How Much Water is Available for Additional Industry?
- B. What is the Quality of the Water Supply?
- C. At What Cost is the Water Available?

X. LIVING CONDITIONS
- A. What Housing Facilities are Available for Education, Recreation, Shopping, Religious and Social Life, Health and Professional Services?
- B. Are Adequate Facilities Available for items in A?

XI. LAWS AND REGULATIONS
- A. What Laws and Regulations Exist of Significance to Prospective Industries?

XII. TAX STRUCTURE
- A. How Favorable is the Tax Structure to Industry?

XIII. CLIMATE
- A. What are the Climatic Characteristics of the Area?

In the abovementioned study, these 13 basic Factors are set up as criteria for judging their locational influences on 75 "industry groups", in terms of "Most Important Factors" and "Usually Important Factors". Thirty-two of these industry groups are included in the following chart. It will be noted that none of the groups selected include the "Location of Production Material" as a "Most Important Factor" which at the outset would tend to qualify certain industries of the groups for location at Danville. This assumes, of course, that the other conditions regarded as most important can be met.

BASIC FACTORS INFLUENCING INDUSTRY LOCATIONS

Industry Groups	Most Important Factors
8. Bakery products	IV, VI, VII, XII.
10. Liquors, blended, rectified; candles; whiting; putty; wood fillers, dryers, thinners and allied paint products.	V, VII, XII.
11. Oleomargarine, vegetable; wood preserving; industrial organic chemicals; essential oils; leather, tanned, curried, finished; electric lamps.	III, IV, V, VII, XI, XII.
15. Cigars. Envelopes. Lithographing, bookbinding, printing trade service industries, publishing and printing. Wooden partitions, shelving, lockers, office and store fixtures.	II, VI, VII, VIII, XII.
16. Textiles. Prefabricated buildings. Fabricated metal products. Office, service, household equipment. Electrical industrial apparatus.	II, III, VII, VIII, XII.
17. Scouring and combing plants, dying and finishing of textiles, knitted and worsted goods.	II, III, VI, IX, XI, XII.
18. Hats, felt and straw. Leather gloves, luggage, handbags, small leather goods. Paints, varnishes, lacquers, inorganic paint pigments, sulfonated oils.	II, VII, XII.
19. Wearing apparel. Fur garments. Leather belting, packing, shoe stock, footwear.	II, VI, VIII, XII.
21. Biological products, inorganic and organic medical chemicals pharmaceutical preparations.	II, VII, IX, XII.

Industry Groups	Most Important Factors
30. Millwork plants.	II, III, V, VI, VII, VIII, XI, XII.
31. Plywood plants, lubricating oils and greases not made in petroleum refineries.	II, III, V, VI, VII, VII, XII.
32. Fruit and vegetable baskets; cigar boxes; mirror and picture frames.	VI, VII.
33. Shoe lasts and related products. Incidental wood products. Paper bags and containers. Glass products from purchased glass. China decorating.	II, VI, VII.
35. Mattresses; bedsprings, assembling.	VII, XI.
36. Wood window and door screens, shades and Venetian blinds.	VI, VII, XII.
38. Paper coating and glazing. Concrete products.	III, V, VI, VII.
39. Fiber cans, tubes, drums; die-cut paper products; pressed and molded pulp products; cardboard; converted paper products.	III, VI, VII.
44. Miscellaneous chemicals, including chemical products and preparations.	IV, V, VII, IX, XI, XII.
50. Flat glass; glass containers (bottles).	II, III, IV, V, VI, VII, X, XII.
57. Machinery. Engines. Electric motors, generators. Transportation equipment. Enameled-iron, sanitary ware and plumbers supplies. Electric welding apparatus. Pressed and blown glass and glassware not classified under No. 50.	II, III, IV, V, VII, VIII, XII.

Industry Groups	Most Important Factors
62. Machinery parts; machine job shop.	II, IV, V, VI, XII.
64. Galvanizing and other hot dip coating.	III, IV, V, VI, XII.
65. Sheet metal work.	V, VI, XII.
66. Insulated wire and cable.	II, III, IV, V, VII, VIII, X, XII.
67. Radios; radio and television equipment (except radio tubes); radar and related apparatus; phonographs.	II, V, VII, X, XII.
68. Radio tubes. Non-radio electronic tubes. X-Ray and therapeutic apparatus and related products. Phonograph records. Telephone, telegraph and communications equipment.	II, V, VII, XII.
69. Storage batteries; primary batteries, dry and wet.	V, VI, VII, XII.
70. Jewelry (precious metal).	II, VII.
71. Silverware; plated ware.	II, VI, VII, XII.
72. Musical instruments. Toys. Athletic goods. Costume jewelry. Fabricated plastic products.	II, III, VII, XII.
73. Paper matches.	II, III, V, VII, XI, XII.
75. Fireworks and pyrotechnics; small rubber goods and rubber sundries.	III, VII, XI, XII.

Other industries included in the above groups.

(16.) Yarn mills. Yarn throwing mills; thread mills. Broad and narrow woven fabric mills (cotton, silk, synthetic fiber). Woolen, worsted. Full-fashioned hosiery mills. Seamless-hosiery mills. Knit mills (outerwear, underwear, glove fabric). Wool carpets, rugs, and carpet yarns. Carpets, rugs, and mats from fiber (except wool). Prefabricated wooden buildings and structural members. Tin cans and other tinware. Cutlery. Edge tools. Files. Hand saws and saw blades. Hardware. Oil burners, domestic and industrial. Heating and cooking apparatus (except electrical). Metal doors, sash, frames, molding and trim. Automobile stampings. Stamped and pressed metal products. Electroplating, plating and polishing. Lighting fixtures. Screw-machine products. Collapsible tubes. Fabricated metal products. Computing machines and cash registers. Typewriters. Vending, amusement, and other coin operated machines. Scales and balances. Office and store machines and devices. Sewing machines. Vacuum cleaners. Measuring-and-dispensing pumps. Service-industry and household machines. Switch-gear, switchboard apparatus, and industrial controls. Electrical apparatus for industrial use. Laboratory, scientific and engineering instruments. Mechanical measuring and controlling instruments. Optical instruments and lenses. Surgical and medical instruments. Surgical and orthopedic appliances and supplies; and personal safety devices. Opthalmic goods. Photographic equipment and supplies. Watches, clocks and parts. Watchcases.

(19.) Men's, youths' and boys' shirts, collars, nightwear, underwear, neckwear, cloth hats and caps, separate trousers, work shirts, sport and other clothing. Women's and misses', children's and infants' underwear and nightwear. Corsets and allied garments. Millinery. Children's and infants' dresses, coats, outerwear.

(68.) Inter-office sound communication systems. Public address systems. Dictaphone, dictagraph, teletypes, etc.

(70.) Jeweler's findings and materials. Lapidary work.

(72.) Fabricated plastic products. Dolls. Children's vehicles. Pens, mechanical pencils, and pen points. Lead pencils and crayons. Hand stamps and stencils. Carbon paper and inked ribbons. Feathers, plumes, and artificial flowers. Buttons. Needles, pins, hooks and eyes, and similar notions.

APPENDIX E

THE BAY AREA ECONOMY: PATTERN OF ECONOMIC ACTIVITIES

TABLE 1

THE PRE-WAR PATTERN (1930)

INDUSTRY GROUP	PERCENT OF TOTAL	INDUSTRY GROUP	PERCENT OF TOTAL
EXTRACTIVE	8.27	TRADE & COMMERCE	34.28
AGRICULTURE	7.48	TRADE	22.04
FORESTRY & FISHING	.26	TRANSPORTATION	12.24
OIL & GAS WELLS	.12	SERVICE	24.61
OTHER MINES & QUARRIES	.41	PROFESSIONAL SERVICE	9.31
MANUFACTURING & BUILDING	28.49	PUBLIC SERVICE	3.39
MANUFACTURING	22.19	DOMESTIC & PERSONAL SERVICE	11.91
BUILDING	6.30		
		INDUSTRY NOT SPECIFIED	4.36

SOURCE: An Economic and Industrial Survey of the San Francisco Bay Area, California State Planning Board, 1941, p. 105.

TABLE II

DISTRIBUTION OF EMPLOYMENT BY INDUSTRY GROUPS

(POST-WAR PATTERN)

	San Francisco-Oakland Metropolitan District 35/		Percent Increase 1940-47			
	April 1940	April 1947	S.F.-O. List.	L.A. 36/ List.	37/ State	U.S. 38/ (Wage and Salary Workers)
Total Employment	561,447	891,135	59	51	41	
Agriculture, Forestry, Fisheries and Mining	11,404	16,000	40.3		18	
Construction	32,770	58,167	77	80	43	41
Manufacturing	120,488	181,125	50	98	75	49
Transportation, Communication and Utilities	63,014	105,156	67	56	47	30
Wholesale and Retail Trade	128,991	210,933	64	40	36	25
Service Industries	169,575	239,499	41	34	20	29
Government	25,783	73,838	186		75	33
Industry Not Reported	9,422	6,417	-32			
Percent Distribution	100	100				
Commodity-Producing Activities	29	28				
Agriculture, Forestry Fisheries, Mining	2	1				
Construction	6	7				
Manufacturing	21	20				
Non-Commodity-Producing Activities	69	71				
Transportation, etc.	11	12				
Wholesale & Retail Trade	23	24				
Service Industries	30	27				
Government	4	8				
Industry Not Reported	2	1				

SOURCE: Economic Expansion in the San Francisco Bay Area 1940-47, based on Census data, by V. L. Stanbery, U.S. Dept. of Commerce, October, 1947.

TABLE III

DISTRIBUTION OF EMPLOYMENT BY OCCUPATIONAL CLASSES

San Francisco-Oakland Metropolitan District[35]

Percent Increase April 1940 - April 1947

	Total	Male	Female
All Employed	59	49	84
Professional and Semi-Professional	73	71	75
Proprietors, Managers, Officials	67	63	90
Clerical, Sales and Kindred Workers	66	25	120
Craftsmen, Foremen and Kindred Workers	96	97	86
Operatives and Kindred Workers	43	39	61
Domestic Service Workers	-4	-56	7
Service Workers, except Domestic	38	27	61
Laborers	30	28	93
Occupation Not Reported	10	31	-30
Wage and Salary Workers	62	51	88
Self-Employed	43.6	42	50
Unpaid Family Workers	4.0	-75	24

SOURCE: Economic Expansion in the San Francisco Bay Area 1940-47, based on Census data, by V. B. Stanbery, U. S. Dept. of Commerce, October 1947.

APPENDIX F

TABLE I

SPECIALIZED[39] INDUSTRIES OF THE BAY AREA AND THE STATE

	S.F.-Oakland Industrial Area			California	
		Percentage of U.S.		Percentage of U.S.	
	No. of Wage Earners	Wage Earners	Value Added	Wage Earners	Value Added
Average, all manufacturing	88,414	1.0	1.4	3.5	4.3
Canning & dried fruit & vegetables	6,470	4.7	6.0	24.8	26.3
Petroleum Refining	4,061	4.9	5.1	10.6	15.7
Shipbuilding	3,322	5.3	6.4	7.5	8.6
Tin cans, tinware, etc.	1,648	5.0	6.4	9.6	15.3
Paints, pigments, varnishes	1.077	3.4	4.0	5.5	5.7
Mattresses & bedsprings	1.026	5.4	6.3	8.5	9.4
Sheet metal work	809	3.5	3.8	9.1	8.1
Bags, other than paper	596	4.9	5.0	6.4	6.8
Oils, n.e.c.	382	5.4	16.5	21.4	21.2
Explosives	377	7.0	8.0	7.0	8.0
Liquor, rectified	322	4.5	2.4	5.3	2.9
Doors, shutters, etc. metal	307	3.7	3.9	5.0	5.5
Macaroni, etc.	243	3.8	4.3	7.9	8.9
Insecticides	176	4.1	3.8	7.9	7.1
Ink	165	5.9	4.5	5.9	4.5
Flavoring extracts	158	3.8	3.9	19.0	11.0
Baking powder, yeast, etc.	140	5.9	3.9	5.9	3.9
Curtains	88	12.4	5.8	5.4	4.7
Wool scouring	69	5.5	5.6	5.5	5.7
Theatrical scenery	15	3.8	4.0	13.4	10.0

SOURCE: An Economic and Industrial Survey of the San Francisco Bay Area, California State Planning Board, 1944.

TABLE II

BAY AREA INDUSTRIES ("well developed")

	Number of Wage Earners	Percentage of U.S. Wage Earners	Percentage of U.S. Value Added
Printing, newspaper	3,071	2.3	1.9
Planning mill products	1,886	2.8	3.1
Confectionery	1,583	2.9	2.7
Work clothing, mens'	1,519	2.3	2.7
Liquor, malt	1,012	2.2	2.8
Structural and ornamental iron work	766	2.0	1.9
Wire work	730	2.2	3.0
Engines	675	2.1	2.6
Coats and suits, womens' and misses'	597	2.9	1.4
Boiler shop products	544	2.2	2.4
Knitted outerwear	522	2.2	3.1
Book binding & publishing	446	1.8	3.1
Food preparations' n.e.c.	434	2.6	1.8
Feeds for animals & fowls	392	2.7	2.7
Concrete products	291	2.3	2.6
Signs & novelties	379	2.4	2.8
Envelopes	258	2.7	3.6
Chocolate & cocoa products	161	2.2	2.9
Awnings, tents, etc.	133	2.8	2.6
Stereotyping & electrotyping	124	2.6	2.0
Compressed & liquefied gases	118	2.5	2.5
Liquors, vinous	62	2.1	1.1
Malt	43	2.6	2.9
Statuary	19	2.2	2.2

SOURCE: An Economic and Industrial Survey of the San Francisco Bay Area, California State Planning Board, 1941.

TABLE III

BAY AREA INDUSTRIES ("average" development)

	Number of Wage Earners	Percentage of U.S. Wage Earners	Percentage of U.S. Value Added
Bread & bakery products	3,944	1.6	2.0
Printing & publishing	2,460	1.7	2.1
Meat packing, wholesale	1,412	1.1	1.4
Foundry products	1,313	1.1	1.3
Machine shop products	1,295	1.2	1.4
Chemicals, n.e.c.	1,255	1.6	1.6
Heating & cooking apparatus	1,093	1.2	1.4
Boxes & paper	1,037	1.6	1.9
Leather, tanned	475	1.0	1.1
Jewelry	344	1.7	1.7
Pumps	338	1.2	1.2
Canned fish	329	1.8	1.4
Millinery	311	1.5	1.3
Boxes, wooden	271	1.0	1.3
Photoengraving	231	1.9	2.1
Ice cream	2.9	1.2	1.4
Fur goods	205	1.6	1.5
Wrought pipe	195	1.4	1.4
Sausages, meat puddings, etc.	175	1.9	2.2
Electroplating	137	1.6	2.0
Poultry dressing	135	1.5	2.5
Cooperage	126	1.5	2.2
Mirrors	124	1.0	.8
Furnishings, men's	119	1.0	.7
Blouses, women's, misses'	116	1.8	1.6
Leather goods	76	1.1	.7
Hats & caps	62	1.8	1.5
Models & patterns	59	1.0	1.3
Hand stamps	42	1.8	2.0
Lettering	33	1.2	1.0
Flags, bunting, etc.	32	1.5	2.1

SOURCE: An Economic and Industrial Survey of the San Francisco Bay Area, California State Planning Board, 1941.

TABLE IV

BAY AREA INDUSTRIES ("underdeveloped")

	Number of Wage Earners	Percentage of U.S. Wage Earners	Percentage of U.S. Value Added
Steel works & rolling mills	4,098	.9	.8
Electrical machinery	1,495	.6	.8
Furniture	1,447	.9	1.0
Machinery	934	.6	.6
Dresses	873	.7	.7
Clay products	472	.8	.9
Rubber goods	420	.9	1.5
Stamped & processed metal	369	.6	1.0
Cigars	349	.6	.7
Clothing, Men's	312	.2	.2
Drugs & Medicines	200	.8	.5
Beverages, non-alcoholic	189	.7	1.1
Marble	154	.7	1.1
Instruments & apparatus	146	.8	1.3
Trunks	139	.4	1.8
Grease & tallow	136	.3	2.6
Corsets & Allied Garments	115	.7	.7
Trousers, etc.	114	.7	.6
Ice	111	.6	.6
Carpets	104	.8	1.2
Lighting Equipment	93	.4	.5
Gloves	88	.8	.9
Refrigerators	81	.2	.2
Surgical appliances	75	.9	.7
Butter	70	.4	.5
Miscellaneous	65	.4	.5
Brushes	63	.8	1.0
Machine Tools	63	.2	.2
Toys	46	.3	.6
Screw & Machine Products	42	.2	.2
Fertilizers	41	.2	.2
Hand Bags	38	.3	.4
Perfumes	32	.3	.4
Tools	30	.2	.2
Mirror & Picture Frames	29	.8	1.4
Trimmings	27	.6	.5
Window Shades	24	.8	1.1
Cheese	21	.5	.4
Cleaning & Polishing Materials	19	.6	.3
Brooms	17	.4	.6
Wall Board	12	.2	.2
Sports & Athletic Goods	10	.1	.1
Lubricating Oils & Greases	8	.4	.3

SOURCE: An Economic and Industrial Survey of the San Francisco Bay Area, California State Planning Board, 1941.

TABLE V

CAPITAL INVESTMENT IN NEW PLANTS & EXPANSIONS IN BAY AREA

	1948	1947
Food & Kindred Products	$20,929,200	$21,984,378
Tobacco Manufacturing	-	225,000
Textiles	819,000	175.400
Apparel	520,000	613,500
Lumber & Timber	211,000	807,000
Furniture & Finished Lumber	1,556,200	1,915,500
Paper & Allied Products	4,455,000	2,475,000
Printing & Publishing	2,787,700	2,660,000
Chemicals & Allied Products	8,737,000	10,516,200
Petroleum & Coal Products	21,208,000	775,000
Rubber Products	115,000	167,000
Leather & Leather Products	190,000	6,000
Stone, Clay & Glass Products	6,357,500	8,625,250
Iron, Steel & Their Products	6,151,400	15,612,000
Non-Ferrous Metals & Their Products	684,500	3,823,000
Electrical Machinery	850,000	10,061,000
Machinery, Except Electrical	3,946,500	5,061,000
Automibiles & Auto Equipment	1,294,500	8,351,000
Transportation Equipment (Except Automobiles)	3,880,000	3,722,350
Miscellaneous Industries	612,000	735,400
TOTAL	$85,303,500	$98,320,978

SOURCE: San Francisco Chamber of Commerce, cited in "Facts About the Bay Area", Economic Series: M-7 Revised; issued by The Bay Area Council.

APPENDIX G

DISTRIBUTION OF MANUFACTURING WAGE EARNERS AND VALUE ADDED BY MANUFACTURE AMONG THE MAJOR CITIES AND COUNTIES OF THE SAN FRANCISCO BAY AREA, 1899-1939[40]
(Percentage of Total)

	Wage Earners				Value Added by Manufacture		
	1899[41]	1919[41]	1929[41]	1939	1919[41]	1929[41]	1939
San Francisco	72.6	41.5	42.5	35.8	39.7	43.8	34.3
San Mateo County	1.0	5.8	3.5	3.9	5.2	3.2	3.8
Alameda County	12.8	30.7	28.7	30.5	27.1	30.1	30.5
Oakland	4.2	19.9	17.8	18.1	18.0	18.1	16.9
Berkeley	.4	2.0	3.2	3.1	2.2	3.9	3.8
Alameda	.6	5.8	1.1	1.0	3.8	.8	.7
Remainder of County	7.6	2.9	6.6	8.3	3.1	7.3	9.1
Contra Costa County	2.5	11.5	12.2	15.5	17.4	13.8	20.4
Marin County	.6	.5	.7	.3	.4	.5	.3
San Francisco-Oakland Industrial Area	88.9	90.0	87.6	86.0	89.7	91.4	89.3
Santa Clara County	5.6	6.2	10.2	10.5	5.9	6.8	7.4
Sonoma County	2.9	1.6	.9	1.8	1.7	.7	1.5
Solano County	1.5	1.5	.8	.9	1.9	.8	1.3
Napa County	1.1	.7	.5	.8	.7	.3	.5
Total Bay Area	100.0	100.0	100.0	100.0	100.0	100.0	100.0

APPENDIX H

THE ECONOMIC BASE OF DANVILLE

Economic Base (over all requirements, 1st approximation)

With an assumed total population of 30,000 for Danville the active labor force has been calculated at approximately 14,500. This figure was arrived at by assuming average family size of 3.6 persons and the average number of workers per family as 1.75.

It has been assumed that there will be a net out-migration of workers to other sections of the Bay Area to the extent of approximately one-fifth of the total labor force, or 2,900 workers, thereby reducing the "local" total to 11,600. The assumption of the commuter population at only one-fifth the labor force was made with the belief that the figure might well be as much as one-third or even higher, but the reason the minimum figure was adopted was to provide a wider margin of safety in the determination of the economic base.

Roughly ten per cent of the total labor force of approximately 1,500 workers have been allocated to the "local" economy which leaves a total of 10,100 workers for the "basic" economy.

Schedule 1. presents a breakdown of the components of the "local" economy showing the manpower and space requirements for the specific functions. The "basic" economy is outlined in a similar fashion in Schedule 2.

The over all space requirement for the basic economy has been calculated at 150 acres with about ten per cent of this space located in the greenbelt. The area requirements for the local economy are estimated as sixty acres (approximately) for the "inside" of the city with an additional sixty acres (approximately) in the greenbelt.

SCHEDULE 1: THE LOCAL ECONOMY

Activity	Number Gainfully Employed
Public Service in Central District Library, High School, Hospital, City Hall Administration, Fire, Police, Court, Jail, Garage, Post Office, Theater, Bank, Railroad and Local Transit.	550
Commercial Facilities in Central District Art and Antique, Automobile, Auto Accessory, Bakery, Boot and Shoe, Building Material, Cigar and Tobacco, Clothing, Confectionary, Custom Tailor, Supermarket, Liquor, Dairy and Poultry Products, Department Store, Drug, Dry Goods and Notions, Electric Appliance and Supply, Florist, Furniture and Home Furhishings, Grocery and Delicatessen, Hardware, Jewelry and Gift, Meat, Poultry, and Fish, Millinery, Music, Office Equipment, Paint, Oil, Varnish, and Glass, Photographic Supplies, Plumbing and Heating Supply, Radio and Radio Repairs, Restaurant and Bar, Sporting Goods, Stationery, Books, and Magazines, Variety, Bowling Alley.	460
Neighborhood Facilities Drug, Service Grocery, Cash and Carry Grocery, Bakery, Small Notion or Variety, Barber Shop, Shoe Repair, Cleaner-Dyer, Laundry, Beauty Shop, Filling Station, Churches.	300
Construction and Local Industrial Services	150
Greenbelt Golf Course, Sewage Disposal, Boy Scout Day Camp, Miscellaneous.	40
Total	1500

SCHEDULE 2: THE BASIC ECONOMY

Activity	Number Gainfully Employed	
Manufacturing		6700
Deficient Industries: Drugs and Medicines; Instruments and apparatus; Surgical appliances; Rubber goods; Electrical machinery; Refrigerators; Lighting equipment; Stamped and processed metal; Screw and machine products; Tools; Furniture; Window Shades; Trimmings; Mirror and picture frames; Brooms; Brushes; Cleaning and polishing materials; Trunks and luggage; Handbags; Sports and athletic goods; Toys; Gloves; Men's clothing; Dresses; Perfumes; Bookbinding and publishing.	4000	
Less Deficient Industries: Heating and cooking apparatus; Electrical appliances; Pumps; Hand stamps; Photo-engraving; Mirrors; Jewelry; Leather goods; Hats and caps; Models and patterns; Furnishings men's; Blouses, women's, misses; Millinery; Food processing; Ice cream; Bread and bakery products.	2200	
Industrial Services: Bag plant (burlap, cloth, paper); Boiler shop; Box and shook factory; Container plant (glass, metal, paperboard, tin); Electroplating shop; Forge shop; Foundry shop (ferrous, non-ferrous); Galvanizing shop; Heating and ventilating shop; Ice plant (natural, dry); Tool and die shop; Welding shop (gas, electric).	500	

SCHEDULE 2 (Continued)

Activity	Number Gainfully Employed	
Service Industries		1000
"Union Insurance Center"	750	
Other financial and service activities	250	
Public Services		2400
"Medical Center" Veterans' Hospital; Medical Research laboratories; Mental health clinics; Radiation medicine facilities, etc.	500-1000	
Other Public Services and Administrations: Federal; State; County.	900-1400	
Total		10100

The Basic Economy

In the breakdown of the labor force of the basic economy (10,100 workers) it has been assumed that approximately two-thirds, or 6,700 workers, will be gainfully occupied in various manufacturing and related activities. The remaining one-third of this labor force (approximately 3,400) has been allocated to various service industries and public activities.

In general, the determination of specific manufacturing activities was arrived at by comparing the lists of industries cited by the State Planning Board of 1941 as "deficient" or "partially deficient" in the Bay Area, with the lists of non-resource oriented industries listed in Appendix D of this report. It was felt that the industries listed in groups 16 and 19 were the most adaptable to the site and assumed future conditions at Danville.

As for the non-manufacturing sector of the economy, it was felt that, in the field of private service industries, the insurance business offered an immediate and highly practical opportunity for efficient decentralization. According to even the present scale of this activity in the Bay Area, an allocation of 750 workers to this operation in Danville was assumed as entirely reasonable. To encourage the shift of this activity to Danville and to make a basic contribution to increased efficiency and lower operating costs it is recommended that something comparable to a "Union Insurance Center" be considered. A facility such as this might accomodate twenty-five to fifty firms. (The entire organization in the case of small firms, and of branches in the case of larger firms.)

Of the many public activities that could be effectively decentralized and located at Danville, it was decided that a large medical center, with a Veterans' Hospital as the basic component, should be given priority. Already, on the basis of only the needs up to 1948, there is a program for considerable expansion of such facilities, and the need has shown a recent sharp increase. The natural features of the site of the new city, chiefly in terms of its setting and climate, offer a better setting for a Veterans' Hospital than almost all of the present locations of these facilities in the Bay Area. The other components of this "Medical Center" could be made up from a variety of much-needed services, and the integrated development of the center could invite the participation and financial support of not only all the

levels of government, but of private organizations as well. In addition to medical research activities connected to a local pharmaceutical industry, the center could provide various out-patient services with the development of rapid transit facilities.

The preceding table is offered as a possible schedule of the elements of a basic economy for Danville. The detailed breakdown of employment has been confined only to major categories with the exception of the two major separate activities mentioned above. The category "industrial services" consists of activities considered necessary to the servicing and maintenance of the basic economy although these facilities, to a lesser degree, would serve the local economy also.

APPENDIX I

NATURAL PHYSICAL CONDITIONS IN DANVILLE

The climate of the San Francisco Bay region is a transitional one between the hot arid regions of Lower California and the mild wet Pacific Northwest. This climatic type, called Mediterranean, is generally characterized by warm dry summers and cool moist winters throughout the coastal areas of California. There are, however, great variations in temperature and precipitation, often within very short distances, due to differences in topography.

In the Bay region, the lines of equal temperature (isotherms) have a north-south rather than the usual east-west trend paralleling the contours of the Coast Range. The Pacific Ocean, in conjunction with the prevailing westerly wind gives the coastal area a moderate marine climate. The Central Valley of California has a continental type of climate with more climatic extremes. Hence the interior areas of the Bay region are in another transitionsl position. The marine influence penetrates further into the interior where gaps occur in the mountain ranges. This occurs at the gaps created by the Carquinez Strait and by the Golden Gate.

The closest weather station to Danville is at Walnut Creek just seven miles to the north. With a difference in altitude of just 200 feet and lying in the same valley we can assume that the climatic conditions of the two localities are alike. The accompanying climatic data sheet gives the main features of the climate at Walnut Creek. Danville probably has somewhat greater extremes in climate than Walnut Creek due to its slightly more enclosed position in the hills and its small increase in elevation. The valley floor at Danville tends to be a bit cooler than the surrounding slopes, and less rain can be expected to fall on the east-facing slope than on the west-facing slope. 42/

WALNUT CREEK: Elevation 149 feet

Months	J	F	M	A	M	J	J	A	S	O	N	D
Average Maximum Temperature (6 yr. record) Annual: 71.4 - all numbers in degrees Fahrenheit												
	54.2	60.1	66.7	70.6	73.0	80.4	85.8	85.5	81.6	75.9	66.2	56.4
Average Minimum Temperature (6 yr. record) Annual: 46.4 - all numbers in degrees Fahrenheit												
	40.6	40.5	42.4	45.2	46.8	50.7	55.5	55.4	53.2	48.1	39.9	38.5
Average Temperature - Annual: 59.8 - all numbers in degrees Fahrenheit												
Number of years of record												
	12	13	13	13	13	12	13	13	13	12	11	13
	46.5	51.2	54.5	58.2	61.9	68.0	72.6	71.7	68.6	62.3	54.3	47.4
Highest Temperature - Annual: 109.0 - all numbers in degrees Fahrenheit												
Number of years of record												
	11	11	12	12	11	11	12	11	12	11	10	11
	80.0	83.0	97.0	90.0	99.0	106.0	108.0	109.0	103.0	97.0	81.0	72.0
Lowest Temperature - Annual: 19.0 - all numbers in degrees Fahrenheit												
Number of years of record												
	11	11	12	12	11	11	12	11	12	11	10	11
	22.0	27.0	19.0	28.0	32.0	38.0	46.0	41.0	41.0	38.0	23.0	22.0

WALNUT CREEK (Continued)

Months	J	F	M	A	M	J	J	A	S	O	N	D
Monthly, Seasonal, and Annual Precipitation (46 yr. record) - in inches - Annual: 19.78												
	4.27	3.84	2.58	1.24	0.59	0.11	Trace	0.05	0.31	0.88	1.97	3.94
Greatest 24 hour Precipitation - in inches - Annual: 4.55												
Number of years of record												
	30	31	31	31	31	30	31	30	30	31	30	31
	4.55	3.60	2.15	2.30	1.09	0.51	0.03	0.23	2.60	1.72	2.85	2.68
Monthly and Seasonal Snowfall (35 yr. record) - in inches - Annual: 0.2												
	0.2	0	0	0	0	0	0	0	0	0	0	Trace
Average number of days with 0.01 inches or more of Precipitation (27 yr. record) Annual: 51												
	10	10	7	4	2	1	Trace	Trace	1	3	5	8

Frost Data

Year	Date of last killing frost before July 15th	Date of 1st frost before July 15th	No. of days after Jan 1st: last frost before July 15th	No. of days after Jan 1st: 1st frost after July 15th	Length of growing season (last frost to first	Latest date with temp. 32° or less before July 15th	Earliest date with temp. 32° or lower after July 15th
1947	-	Nov 6	-	310	-	-	Nov 6
1948	April 7	Dec 1	97	335	238	-	-
1949	Feb 19	Oct 21	50	294	244	-	-

Source: U. S. Weather Bureau, Climatological Section, Federal Office Building, San Francisco

APPENDIX J

STUDENT GROUP ORGANIZATION

A Summary of the Organizational Procedures and Steps While Preparing the Plan and Writing the Report

It is somewhat unusual to find an organizational description in a student problem report. The stimulus and challenge of this problem, however, evoked an interest in the students not produced by any other assignment during the past year and a half of problem work. To adequately meet the challenge of the task an extremely high degree of flexibility, initiative, and cooperation was required of each member of the class. In few other assignments - whether in school or professional agency - had the members of the class been called upon to adapt themselves to such varied and constantly changing demands. This section is included in the belief that the approach to solution used by the class will prove of interest to those persons who have read the report thus far.

Twelve second year graduate students were enrolled in the four unit problem course designated as City Planning 213. These same students had worked together in problem courses during the previous year. Until the present assignment, student groups assigned a single problem had varied in size from two to eight persons. Each group chose its own chairman for the duration of each assignment. The present problem was of much greater extent in time, scope, and the number of students involved than previous efforts. Consequently, Professor T. J. Kent, Jr., in charge of the course, felt that a more formal organization was required.

Professor Kent served as class coordinator for the entire problem and chose two students to serve as co-chairmen. At their suggestion the period of ten weeks to be devoted to the problem was divided into two parts. The first two weeks were to be spent on 1) a survey of the American social-economic scene, 2) a possible physical plan for the development of the Bay Area, and 3) an examination of the present structure of American society as it would be affected if the proposed new community were to become a reality. The remaining eight weeks were to be spent in

preparation of the plan itself, organization of the report, and its reproduction in suitable form.

During this first phase, the class was organized as shown below:

Professor Kent
Class Coordinator

(1)	(2)	(3)
Bryant, Ch.	Dunann, Ch.	Cameron, Ch.
Spencer	Lubin	Keilty
Ware	Murdoch	Finley
Williams	Woodward	Shinoda

Group 1 was to analyze "the objectives of American society ... in relation to urban development in Contra Costs County."

Group 2 was to suggest "... a plan for the San Francisco Bay Area."

Group 3 was to explore the "... implications of the proposed community plan in terms of legislation and government, economic institutions, and living habits."

At the end of the two week period the three sections were tentatively completed and submitted to the coordinator for his review. The sections were so written that significant parts of them could be incorporated into the final technical report.

During the third week of the problem the department was host to Mr. F. J. Osborn, the distinguished British planner and author of Greenbelt Cities. Mr. Osborn, long a resident and manager of Welwyn Garden City, one of the first greenbelt cities, gave a series of lectures on British housing and planning. While little direct work was done on the problem during this week, the stimulus afforded by the increased knowledge of successful communities was reflected in the additional vigor which the class members displayed after Mr. Osborn had left.

In entering the second phase of the problem - that of preparing the plan itself - the class co-chairmen, after conference with the coordinator, organized the group as shown on the following page.

Professor Kent
Class Coordinator

Murdoch, Finley
co-chairmen

(A)	(B)	(C)
Bryant, Ch.	Keilty, Ch.	Lubin, Ch.
Dunann	Cameron	Shinoda
Williams	Spencer	
Woodward	Ware	

Group A was to "...select a site for the proposed new city". It was necessary to determine the principles to be used in guiding the selection of a site for an independently situated community which was to be surrounded by a permanent greenbelt of agricultural and recreational land.

Group B was to decide what "...principles and procedures should guide the planning of a new community". Special attention had to be given the problem requirement calling for "...the controlled expansion...of one existing community..."

Group C was instructed to "...define such terms as are necessary in a discussion of residential densities of several dwelling type buildings usually found in the urban areas of the western United States".

The assignments were finished by the end of the week, Danville chosen as the site, and the class was ready to move on to the "survey" phase. This was an investigation of existing conditions in Danville. During the first part of the survey the class was organized as shown below:

Professor Kent
Class Coordinator

Murdoch, Finley
co-chairmen

(A)	(B)	(C)	(D)
Woodward, Ch.	Shinoda, Ch.	Williams, Ch.	Ware, Ch.
Keilty	Bryant	Lubin	Cameron
	Dunann		
	Spencer		

The information gathered by each group was as follows:

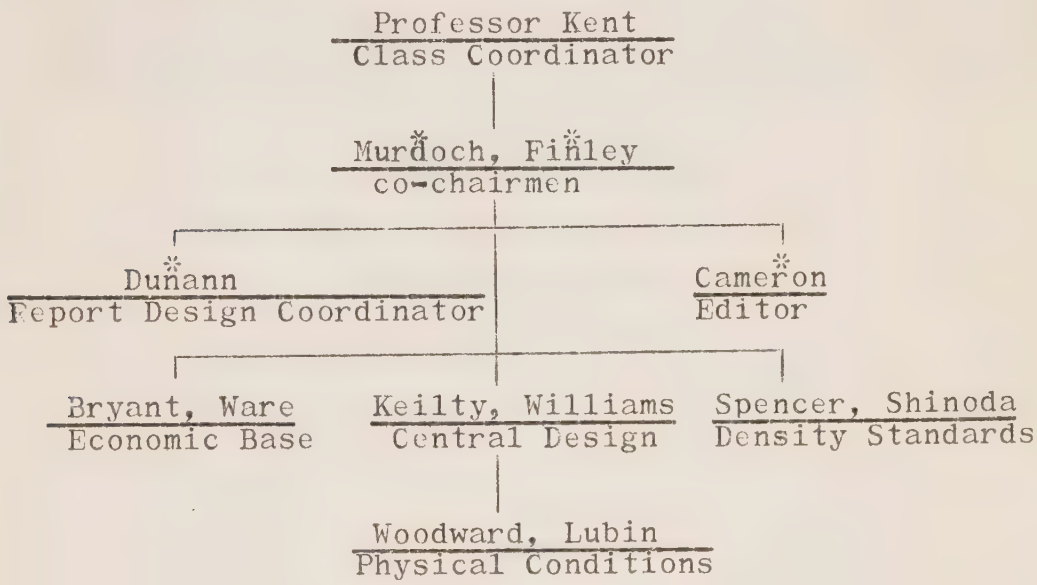
Group A. Natural conditions: regional geographical relationships, topography, geology, natural features, landscaping, resources, etc.

Group B. Existing land use and circulation: land use, age and condition of buildings, circulation pattern, condition of streets, transit facilities, railroads, general appearance, and similar material.

Group C. Economics and government: population, incomes, occupations, economic activity, education, government services, utilities, and the like.

Group D. History and social organizations: general historical data, formal organizations, community social structure, and related material.

At the end of one week sufficient material had been collected to justify a start on the physical plan. The class was then reorganized.



*Members of Committee on Form, Content and Design.

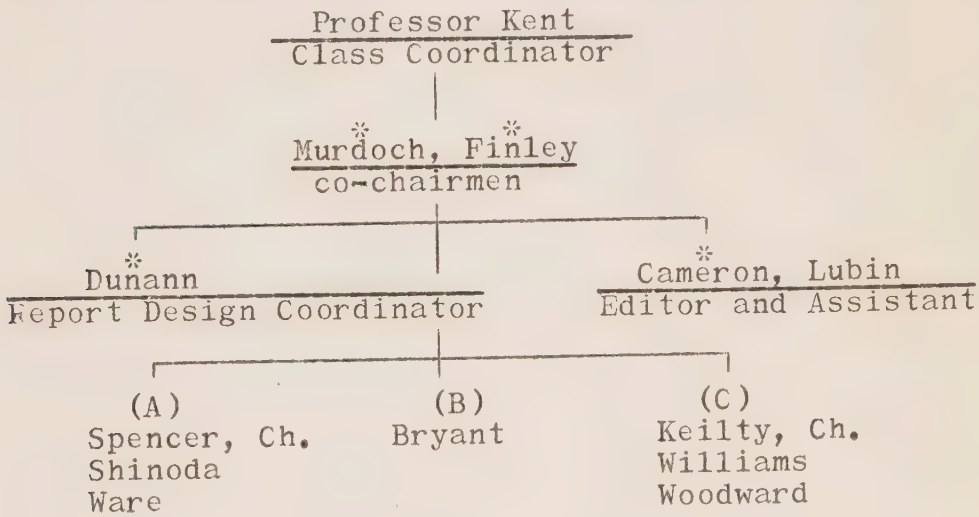
In addition to the physical plan, work was started on the final technical report. The editor adapted the sections completed during the first two weeks to final report form. The report design coordinator (RDC) started work on map layout and technique, page and cover

design, methods of reproduction and binding, costs, and other production problems. The editor, the RDC and the two co-chairmen served as a special committee on the "form, content, and design" of the final report.

The remainder of the class was divided into four groups of two students. The central design group started translating the previously agreed upon procedures into a physical plan for Danville, calling upon the other groups for special aid and advice. A rather flexible organization of this type was necessitated by the interdependency of the many elements comprising the general plan and the need to get specific information quickly.

This phase occupied the two weeks prior to the Christmas vacation. Constant communication between all groups was necessary and was obtained. Group chairmen had numerous conferences with the class coordinator and general class meetings were held to periodically acquaint everyone with the progress made and to evaluate the plan as it was developed.

With the completion of the survey, it was necessary to put both plan and written material into final form. The plan was re-evaluated during the process of writing its description. During this stage the organization was:



*Members of Committee on Form, Content and Design

Group A wrote the final form of the "survey of existing conditions".

Group B compiled a list of significant appendices. (Mat-

erial not included in the final report, but of value to those interested, is on file with the Department.)

Group C prepared the written description of the "Proposed Plan".

With the Christmas vacation and the press of other school work there was a lessening of the intensity of effort on the report. With the approval of the coordinator it was decided to reproduce the final report after final examinations rather than attempt to hurriedly finish the many specific items still undone.

The RDC was assigned an assistant and all those not already working on the final report were assigned plates to be done, suitable for multi-lithing after photographic reduction. The editor prepared the final text for presentation to the class before having it typed, while the co-chairmen attempted to gather up all loose ends. The final class effort was to take all the finished stencils and plates, reproduce them, and gather, bind, and distribute the finished report.

APPENDIX K

COSTS OF REPRODUCTION

The expenses actually incurred in the reproduction of one hundred copies of this report are itemized in the following list. We are greatly indebted to the San Francisco Department of City Planning for the use of its press for printing the cover and plate titles; to the Institute of Traffic and Transportation Engineering for the use of its mimeograph machine; to the Agricultural Extension Service of the University of California for printing the eight multilith plates; and to other agencies and individuals whose aid and cooperation have enabled us to reproduce this report at a relatively low cost.

Typing	
Labor	$50.00
Mimeographing	
Stencils	17.65
Paper	24.50
Miscellaneous	1.23
Plates	
8 multilith plates ($8\frac{1}{2}$x11)	33.20
1 multilith plate (17x22), in including printing and paper	22.25
Paper ($8\frac{1}{2}$x11 plates)	2.72
Miscellaneous (includes materials used in preparation of plates)	21.69
Cover	
Cover stock	5.39
Binding	
Labor and Materials	20.00
TOTAL	$198.63

FOOTNOTES

1. Filed with the Department of City and Regional Planning, University of California, Berkeley, California.

2. United States Department of Agriculture, Climate and Man, Washington: Government Printing Office, 1941, p. 786; and U. S. Weather Bureau, Federal Office Bldg., San Francisco.

3. Climate and Man, p. 786; and U. S. Weather Bureau, San Francisco.

4. Much of the information in this section has been obtained from the Danville Chamber of Commerce.

5. Contra Costa County Social Service Department.

6. Chief Elliot, Contra Costa County fire station, Danville.

7. Interview with Dr. Schulte, Superintendent, San Ramon Valley Union High School District.

8. Estimate by the Danville Chamber of Commerce.

9. Hoover, Edgar M., Location of Economic Activity, New York: McGraw Hill, 1948; p. 243.

10. Ibid., p. 244.

11. An indication of the number and diversity of these industrial types may be seen by consulting Appendix D, page 103, which evaluates, with reference to thirteen basic location factors, a partial list of industrial groupings regarded by the U. S. Department of Commerce as not primarily resource oriented.

12. San Francisco Bay Area Council, San Francisco Bay Area, Its People, Prospects and Problems, San Francisco, 1948, p. 1.

13. Calkins, Robert D., and Hoadley, Walter G., Jr., An Economic and Industrial Survey of the San Francisco Bay Area, Sacramento: California State Planning Board, 1942.

14. Ibid., p. xv.

15. Loc cit.

16. Stanbery, V. B., Economic Expansion in the San Francisco Bay Area, 1940-47, San Francisco: U. S. Department of Commerce, 1947 (mimeographed), p. 11.

17. San Francisco Bay Area Council, op. cit., pp. 22-23.

18. Calkins and Hoadley, op. cit., p. 172. "Area" here means the five county San Francisco-Oakland industrial area of the Census comprising San Francisco, Alameda, Contra Costa, Marin, and San Mateo counties. "Region" means the western market but the relevence obtains even with these qualifications.

19. Ibid., p. 173.

20. Ibid., p. 208.

21. Stanbery, op. cit., p. 10.

22. Cited by S. F. Bay Area Council, op. cit., p. 29.

23. Space does not permit, nor is the data readily available for an over all survey of these activities, and others, in the "Service" industry category. Assumptions regarding the location of these activities in Danville cannot be supported without further study - with the exception noted of the insurance business.

24. S. F. Bay Area Council, Facts About the Bay Area, Economic Series: 1-7, San Francisco, December 5, 1950.

25. Stanbery, op. cit., p. 11.

26. Calkins and Hoadley, op. cit., pp. xxxvii, xli.

27. In these calculations the family size corresponds to the Bay Area average while the workers per family are slightly higher. This latter assumption, combined with the small fraction of workers assumed as net out-migrants, results in a safety factor in that maximum rather than minimum job opportunities are assumed as the problem.

28. This figure was obtained by balancing what typically exists as "industrial land use" with the pattern that has evolved in new city development elsewhere. The very nature of the flexibility of modern technology would seem to preclude area standards in anything but broad terms.

29. New Towns Committee, Final Report of the New Towns Committee, London: His Majesty's Stationery Office, 1946, p. 13.

30. Ibid., p. 10.

31. American Public Health Association, Planning the Neighborhood, Chicago: Public Administration Service, 1948.

32. Bartholomew, Harland, Urban Land Uses, Cambridge: Harvard University, 1932; Butler, George, Recreation Areas, New York: A. S. Barnes, 1947; Lovelace, Eldridge, "Urban Land Use" in the Journal of the American Institute of Planners, Summer, 1949; Sanders, S. E., and Rabuck, A. J., New City Patterns, New York: Reinhold, 1946; U. S. Bureau of the Census, Structures by Types in Contra Costa and Alameda Counties, 1940 Census of Housing, General Characteristics.

33. American Public Health Association, op. cit., p. 4.

34. A two-story, multiple family, row house with separate yard space for each family.

35. Reports of U. S. Census Bureau on the sample survey of Population Labor Force, and Housing in the San Francisco-Oakland Metropolitan District in April 1947 (Series P-21, No. 24; Series P-51, No. 24; Series P-71, No. 24).

36. Report of U. S. Census Bureau on the sample survey of Population in the Los Angeles Metropolitan District in April 1947 (Series P-21, No. 30).

37. Monthly Report on Estimates and Forecasts of Civilian Employment and Unemployment in California, published by the State Reconstruction and Reemployment Commission.

38. U. S. Bureau of Labor Statistics.

39. For criteria of "specialization" see P. Sargent Florence, The Measurement of Economic Balance and Diversification, Explanatory memo., N. R. P. B., Washington, 1941 (mimeo.)

40. Computed from data taken from U. S. Census of Manufactures.

41. Data from 1899 include hand, building, and neighbor-

hood industries and hence are not entirely comparable with those of later years. Data for 1919 also are only roughly comparable since they include small establishments not included in later years. The percentage distributions for 1899 and 1919 are therefore to be considered only roughly comparable with those of later years.

42. Sources for this section: U. S. D. A., Climate and Man, Washington: Government Printing Office, 1941; and Haurwitz and Austin, Climatology, New York: McGraw Hill, 1944.

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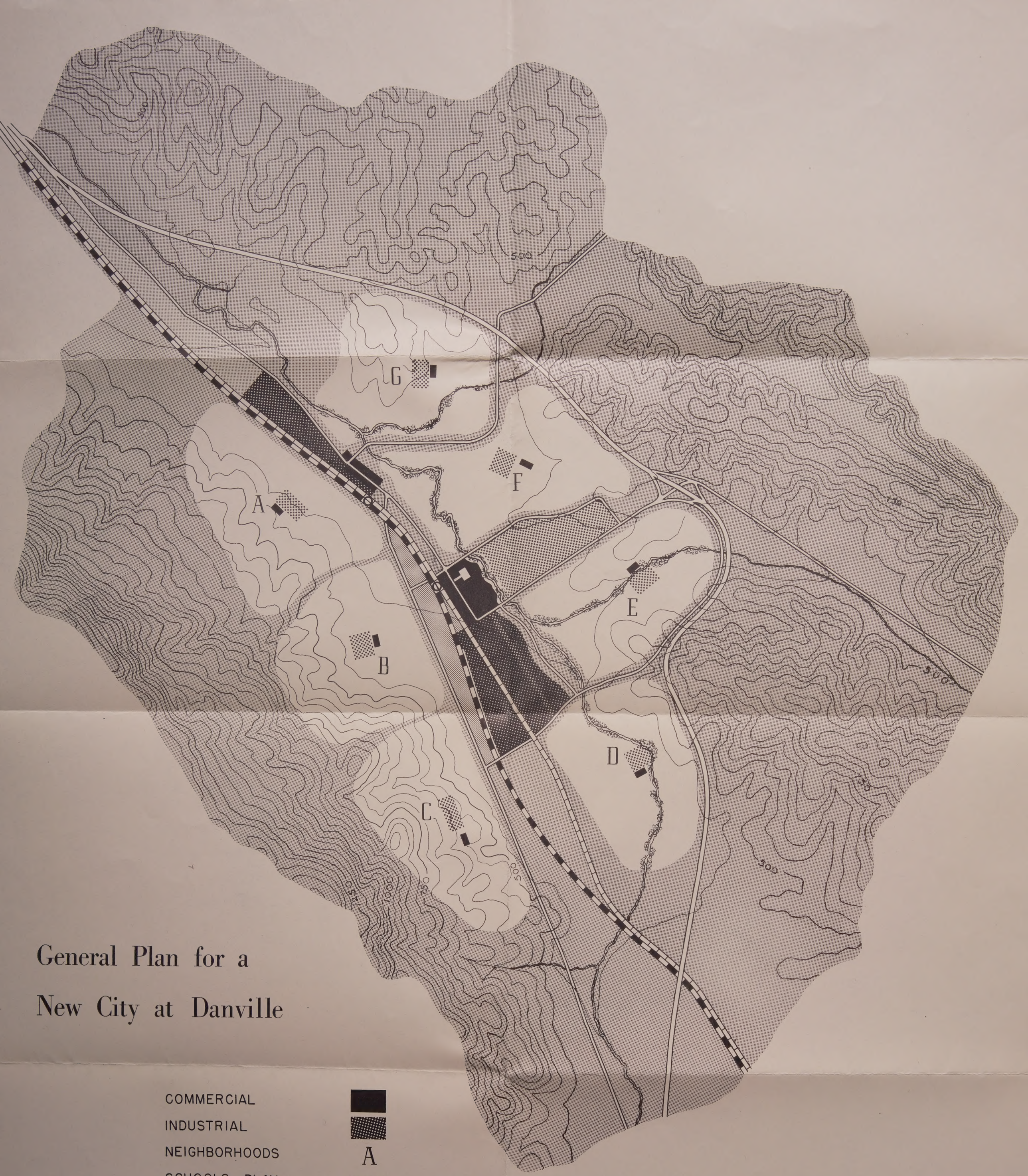

General Plan for a New City at Danville

COMMERCIAL

INDUSTRIAL

NEIGHBORHOODS — A

SCHOOLS, PLAY-GROUNDS & PARKS

GREENBELT

FREEWAY

MAJOR ROADS

TRANSIT

RAILROAD

TRANSIT STATION

STREAMS

0 500 1000 1500 2000
SCALE IN FEET
CONTOUR INTERVAL - FIFTY FEET

NOTE: THIS PLATE IS PART OF A REPORT ENTITLED "A NEW CITY AT DANVILLE: A PROPOSAL FOR GUIDING METROPOLITAN GROWTH," PREPARED BY THE 1949-50 GRADUATE STUDENT GROUP IN THE DEPARTMENT OF CITY AND REGIONAL PLANNING. FALL SEMESTER 1950, UNIVERSITY OF CALIFORNIA, BERKELEY CAMPUS